US EPA RECORDS CENTER REGION 5

EXPANDED SITE INSPECTION REPORT

FOR

STERN RUBBER AND TOOL COMPANY

Staples, Minnesota

U.S. EPA ID: MND045973419

Prepared by:

Susan Fager Project Manager

Site Assessment Unit

Program Development Section

Ground Water and Solid Waste Division Minnesota Pollution Control Agency

Site Assessment Unit

Program Development Section

Ground Water and Solid Waste Division Minnesota Pollution Control Agency

Reviewed by:

Ronald R. Swenson, Supervisor

Site Assessment Unit

Program Development Section

Ground Water and Solid Waste Division Minnesota Pollution Control Agency

Approved by:

John N. Holck, Chief

Program Development Section

Ground Water and Solid Waste Division Minnesota Pollution Control Agency

Date: <u>APRIL Z, 1992</u>

Date: April 2

Date: 4-3-92

Date: 4/3/92



### **Minnesota Pollution Control Agency**

520 Lafayette Road, Saint Paul, Minnesota 55155-3898 Telephone (612) 296-6300

April 3, 1992

Ms. Jeanne Griffin
Program Support Section
U.S. Environmental Protection Agency
Region 5 (5HR-11)
77 West Jackson Street
Chicago, Illinois 60604

APR 7 1992

OFFICE OF RCRA

U.S. EPA, REGION V

Dear Ms. Griffin:

RE: Minnesota Pollution Control Agency Submittal of An Expanded Site Inspection Report, Pursuant to the Preliminary Assessment/Site Inspection Cooperative Agreement

The Minnesota Pollution Control Agency (MPCA) staff submits for your review and approval one Expanded Site Inspection (ESI) Report.

ESI Site Name

Stern Rubber and Tool Company

Inspection Priority

IFRAP J/a/a 2

If you have any questions, please feel free to call me at 612/297-1793.

Sincerely,

Ronald R. Swenson

Supervisor, Site Assessment Unit

Program Development Section

Ground Water and Solid Waste Division

RRS:kra

APR 8 - 1892

SITE ASSESSMENT

# STERN RUBBER AND TOOL COMPANY EXPANDED SITE INSPECTION

#### TABLE OF CONTENTS

Sect	ion		<u>Page</u>
1.0	Intr	oduction	1
2.0	Site	Background	2
	2.2 2.3 2.4	Site Location Site Description Site History Screening Site Inspection Summary Interim Remedial Measures	2 2 2 2 5
3.0	Grou	nd Water Pathway	8
	3.2 3.3 3.4	Hydrogeology Ground Water Targets Well Sampling Locations Results Conclusions	8 8 8 12 12
4.0	Surf	ace Water Pathway	16
	4.2 4.3 4.4	Hydrologic Setting Surface Water Targets Surface Water/Sediment Sampling Locations Results Conclusions	16 16 16 16 17
5.0	Soil	Exposure and Air Pathways	20
	5.2	Background Targets Conclusions	20 20 20
6.0	Summ	ary and Conclusions	21
7.0	Refe	rences	22

#### APPENDICES

#### Appendix

- A. Four-Mile Radius Map
- B. Remedial Action Technical Memorandums
- C. Well LogsD. Site Photographs
- E. Well Stabilization Report
  F. Target Compound List and Target Analyte List
  Quantitation/Detection Limits
  G. Laboratory Analytical Results
  H. Minnesota Department of Health Laboratory Analytical Results

#### LIST OF FIGURES

<u>Figure</u>	Page
2.1 Site Location	3
2.2 Site Features Map	4
2.3 Ground Water Toluene Plume	7
3.1 On-Site Sampling Locations	9
3.2 Off-Site Sampling Locations	10

#### LIST OF TABLES

<u>Table</u>		Page
3.1	Well Sampling Locations and Rationale	11
3.2	Summary of Sampled Wells	11
3.3a	Summary of Chemical Analysis for Organic Compounds - RAS Ground Water	13
3.3b	Summary of Chemical Analysis for Organic Compounds - SAS Ground Water	14
3.4	Summary of Chemical Analysis for Organic Compounds - Minnesota Department of Health Ground Water	15
4.1	Surface Water/Sediment Sampling Locations and Rationale	16
4.2a	Summary of Chemical Analysis for Organic Compounds - RAS Surface Water	18
4.2b	Summary of Chemical Analysis for Organic Compounds - RAS Sediment	19

#### STERN RUBBER AND TOOL COMPANY

#### Staples, Minnesota

#### EXPANDED SITE INSPECTION REPORT

#### 1.0 INTRODUCTION

On April 1, 1985, the Stern Rubber and Tool Company (Site) located in Staples, Minnesota, was placed on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) inventory of potential hazardous waste sites and assigned an U.S. Environmental Protection Agency (EPA) identification number MND045973419. A Preliminary Assessment (PA) for the Site was prepared by Minnesota Pollution Control Agency (MPCA) staff and approved by EPA on June 28, 1985. In May 1990, a Screening Site Inspection (SSI) for the Site was conducted by Ecology and Environment, Inc., (E & E, 1991), a Field Investigation Team subcontracted by EPA.

As a result of ground water contamination discovered by the SSI, MPCA was tasked by the EPA to conduct an Expanded Site Inspection (ESI) for the Site. An ESI Work Plan was prepared by MPCA and approved by EPA in July 1991. On August 6, 1991, the MPCA commenced an ESI at the Stern Rubber and Tool Company. This work was performed in cooperation with the EPA, under a Cooperative Agreement authorized by the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended (U.S. Congress, 1980, 1986; EPA 1990a, 1990b).

The general goals of an ESI are outlined below:

- 1. Collect additional data beyond the scope of the SSI to enable a more refined Hazard Ranking System (HRS) score; and
- 2. assess the likelihood of the site to qualify for the National Priorities List (NPL).

The site-specific objectives of this ESI are as follows:

- 1. Confirm the occurrence of toluene levels found in on-site ground water; and
- 2. further assess targets including the on-site pond and nearby residential wells, some of which were not sampled during the initial SSI.

To achieve these objectives, samples were collected and analyzed for three on-site production (nondrinking) wells, six residential wells, an up-gradient well, a down-gradient monitoring well, one municipal well, on-site pond water and sediment, and off-site pond sediment.

Sample collection, packaging and shipment was conducted in accordance with EPA required procedures and the MPCA Site Assessment Quality Assurance Project Plan (QAPP). All samples were analyzed by EPA Contract Laboratory Program (CLP) laboratories for volatile Target Compound List (TCL) compounds and Target Analyte List (TAL) analytes. Laboratory analytical data has been reviewed by the EPA for compliance with terms of the CLP.

In addition to the field work described above, interviews were held with representatives from the Site and other nearby commercial facilities.

#### 2.0 SITE BACKGROUND

#### 2.1 Site Location

Stern Tool and Rubber Company is located approximately one-half mile west of the intersection of West Prairie Avenue and County Road 30 in the city of Staples, Wadena County, Minnesota. See Figure 2.1. The Site lies within the Staples NE, Minnesota 7.5-minute quadrangle map as published by the U.S. Geological Survey. Specifically, the Site is in the  $SW_4$  of Section 35, T34N, R33W (Appendix A).

#### 2.2 Site Description

The Stern Rubber and Tool Company (now American Rubber Products Corporation) Site is located on approximately 26 acres of former prairie land in the Staples Airport Industrial Park. Several commercial/light industrial businesses are located in the Industrial Park within approximately one-fourth mile of the Site. The Site is surrounded by a predominately rural agricultural setting.

Two main buildings are used for office space and production purposes, with two smaller buildings used for raw material storage and toluene storage. See Figure 2.2. Three nondrinking water wells, one deep well and two shallow sand point wells, are located on site. Manufacturing equipment is cooled with non-contact water obtained from on-site wells, and is discharged to a nearby man-made pond located immediately south of the facility.

#### 2.3 Site History

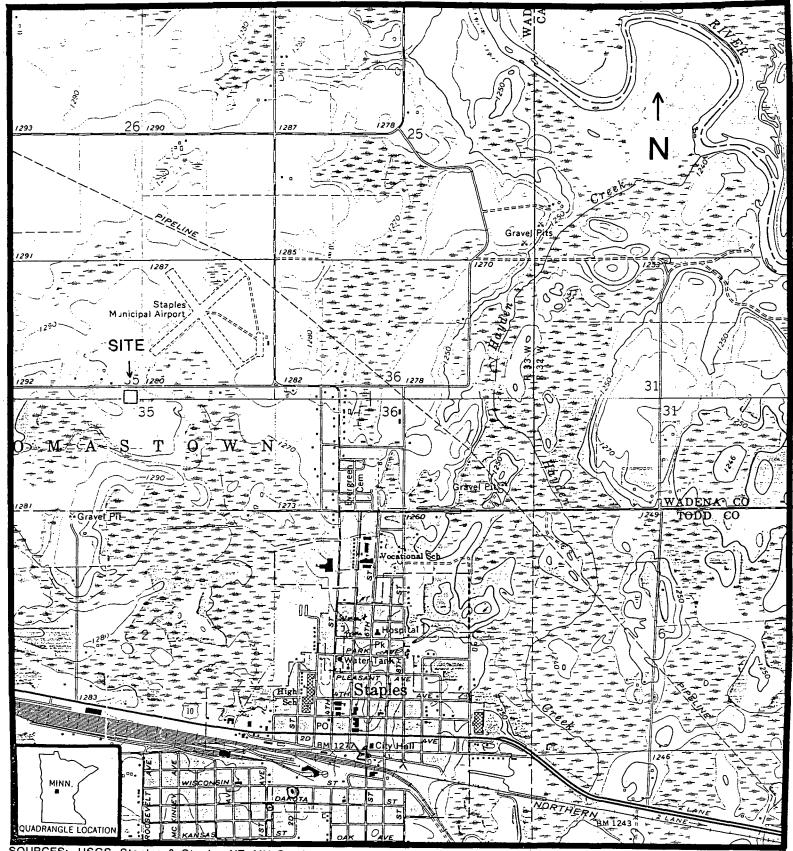
Stern Rubber and Tool Company operated on site from 1973 through 1986. In 1986 the company was purchased by American Rubber Products Corporation of LaPorte, Indiana. Beginning in 1973 the Site has been used to manufacture custom-molded rubber products. Raw materials include carbon black, natural rubber polymers, clays, coloring agents, sulfur, zinc oxide and processing oils (E & E, 1991).

Toluene is used to degrease finished rubber products (E & E, 1991). Prior to 1983, operational practices allowed for the spillage and dripping of used toluene onto soil near the northwest side of the pond (Nova, 1992a). Currently, waste toluene is stored on site and reclaimed. The company generates about twenty 55-gallon drums of liquid waste toluene a year. In the past, excess rubber was burned in outdoor open piles near the facility. Currently, excess rubber is disposed of off site. Waste processing oils are recycled (E & E, 1991).

On June 3, 1984, MPCA received a hotline complaint that alleged waste solvents had been dumped in the discharge cooling pond. A follow-up visit by MPCA staff on August 2, 1984 did not reveal any direct evidence of hazardous waste dumping, although no sampling was conducted (MPCA, 1992).

#### 2.4 Screening Site Inspection Summary

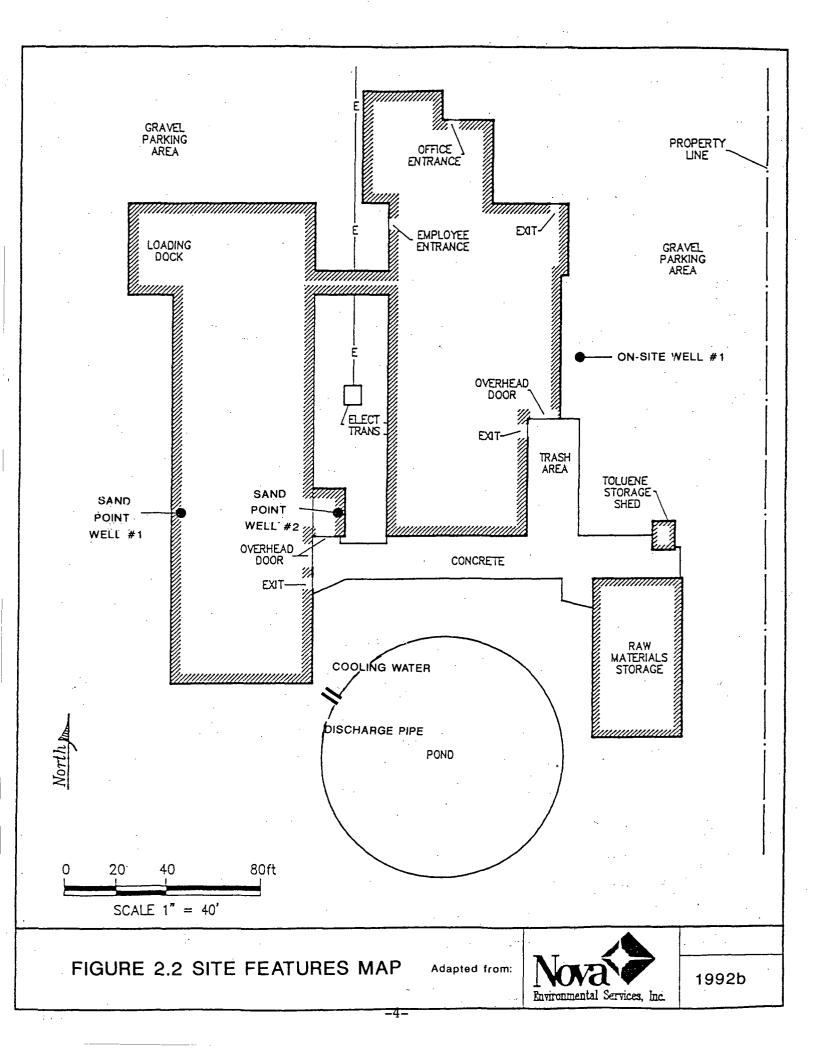
In May 1990, Ecology and Environment, Inc., conducted the field work for a SSI (E & E, 1991). One on-site industrial well and two off-site residential well samples were collected and analyzed for TCL and TAL compounds. Discharge pond water, city municipal supply wells, and several existing nearby monitoring and residential wells were not sampled. Five on-site soil samples, one off-site (background) soil sample, and two pond sediment samples, were also collected and analyzed for TCL and TAL constituents. No surface water or air samples were collected.



SOURCES: USGS, Staples & Staples NE, MN Quadrangles, 7.5 Minute Series, 1966.



FIGURE 2.1 SITE LOCATION MAP



An observed release of toluene to ground water was indicated by the SSI. A ground water sample from the on-site deep glacial drift well was found containing toluene at a level of 17,000  $\mu$ g/l. This well also contained 2-methylphenol (770D  $\mu$ g/l) and 4-methylphenol (80  $\mu$ g/l). Analysis of samples from two nearby residential wells did not show any other of these compounds, or any other contaminants to be present.

On-site soil samples were found to contain bis-2-ethylhexyl phthalate (410,000  $\mu g/kg)$ , beta BHC (240  $\mu g/kg)$ , gamma BHC "Lindane" (110  $\mu g/kg)$ , and zinc (2,500  $\mu g/kg)$ . Although phthalates are common laboratory and sampling contaminants, the high levels reported suggest an on-site contribution. The pesticides detected may be due to previous agricultural use of the area. The reason for the elevated zinc levels may be related to the use of zinc oxide at the facility.

In January 1991, a Management Assistance Review was performed by MPCA staff on the Draft SSI Report. MPCA staff recommended an ESI to include sampling of on-site pond water and additional private wells, and the possible installation of soil borings and monitoring wells. An ESI was commenced in August 1991.

#### 2.5 Interim Remedial Actions

In January 1992 subsequent to ESI field work, the Site was transferred to the MPCA Property Transfer Technical Assistance Program, at the request of Mr. Terrel Stern, general manager and potential purchaser of the company, to conduct further investigations and any necessary remedial action (Stahnke, 1992).

In February 1992, a consulting firm contracted by Mr. Stern submitted technical memorandums to the MPCA outlining the source of toluene and a proposal for additional investigation and remedial actions (Nova, 1992a; 1992b). A draft technical memorandum outlining the results of that investigation and interim remedial actions was received by MPCA on March 12, 1992 (Nova, 1992c). An investigation report and corrective action plan was received on March 30, 1992 (Nova, 1992d).

Sampling performed on February 7-11, 1992, consisted of soil gas analysis in the vadose zone and sampling probes in saturated soil. Samples were analyzed for toluene using a mobile gas chromatograph. Samples were collected from around the perimeter of the on-site buildings. See Appendix B for details.

Soil gas analyses revealed a release of toluene to soil and ground water (Nova, 1992b). The highest levels of toluene were located near the exit doors from the western building, immediately northwest of the pond. Concentrations decreased gradually to the east, suggesting migration in an easterly direction, consistent with the surface grade and reported general direction of ground water flow (Nova, 1992b).

In early March 1992, approximately 150 cubic yards of soil were excavated and stockpiled on site. Soil was excavated until organic vapor meter readings were less than 50 parts per million (ppm), or until removal was impeded by cultural obstructions (e.g., buildings, pond, utilities), or the water table. Water collected from the bottom of the excavation analyzed with a field gas chromatograph yielded toluene levels in excess of 20,000 ppm (Nova, 1992b). Soil samples submitted for laboratory analysis detected toluene at 1200 ppm (Nova, 1992c).

Eighteen drive point wells were installed in the northeast quadrant of the Site and were sampled at the following depths: At the water table, 12 to 15 feet, 16 to 19 feet, 21 to 24 feet, and 26 to 29 feet. Analysis of ground water samples from these wells identified a toluene ground water contaminant plume extending toward the

northeast corner of the property. The lateral and vertical extent of the plume is approximately 50 to 80 feet wide, limited to the upper 20+ feet of a surficial aquifer bounded below by a clay and sand seam unit starting at 25 to 40 feet below the surface (Nova, 1992c; 1992d).

A toluene ground water plume extends to the north-northeast approximately 170 feet east of the Site boundary (Nova, 1992d). See Figure 2.3. Nearby residential wells located north and east of the site have been sampled and show no toluene contamination to date (MPCA, 1992). Remediation proposed for the Site include the installation of ground water pump-out wells with discharge sent via a sanitory sewer to the city of Staples wastewater treatment plant (Nova, 1992d). Investigative efforts are underway to further identify potential ground water targets located downgradient of the Site (Nova, 1992c).

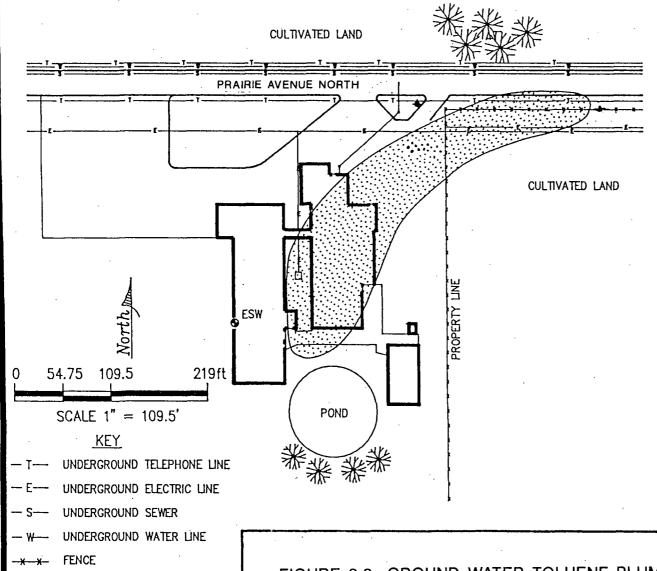


FIGURE 2.3 GROUND WATER TOLUENE PLUME

1992d

IMPACTED WATER

#### 3.0 GROUND WATER PATHWAY

#### 3.1 Hydrogeologic Setting

The hydrogeology of the Site has been discussed in the SSI previously conducted on the Site (E & E, 1991). In general terms, the regional geology is characterized by approximately 200 feet of unconsolidated Quaternary glacial drift overlying impermeable Precambrian crystalline bedrock. Glacial deposits consist of clay, silt, sand, and gravel found as outwash and a buried drumlim field associated with the Alexandria Moraine of the Wadena Lobe (Hobbs and Goebels, 1982). Native on-site soil consists of 25 to 40 feet of fine to medium sand underlain by a clay with sand seams unit roughly 100+ feet thick, followed again by sand. The surficial sand has an estimated hydraulic conductivity of 0.0288 cm/sec (Nova, 1992c). The underlying bedrock is comprised of various granitoid and gneissic rocks (Morey, 1981).

Analysis of water level data from existing shallow monitoring wells located at the Staples Airport suggests the regional ground water flow is to the east-southeast toward Hayden Creek, a tributary to the Crow Wing River (MPCA, 1992). On-site ground water is reported to flow to the northeast with a gradient of 0.002. Mounding effects in the water table are also reported to have been observed near the discharge pond (Nova, 1992c). Depth to ground water on-site ranges from 6 to 8 feet (Nova, 1992d).

#### 3.2 Ground Water Targets

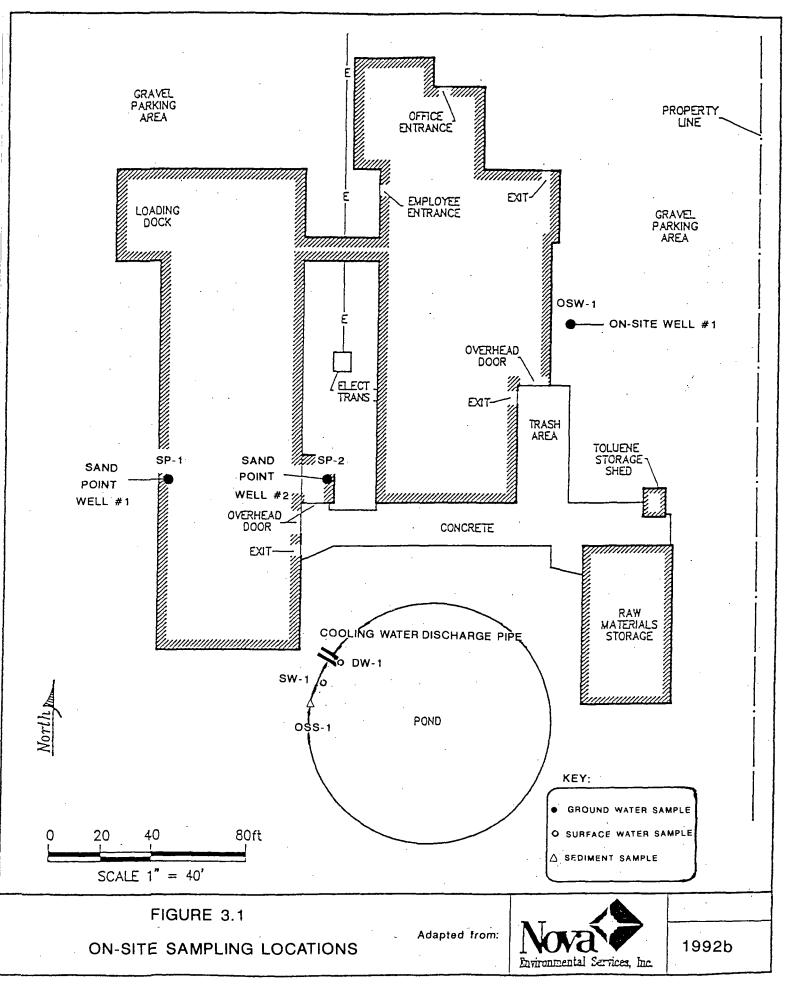
Ground water is used exclusively as the source of drinking water within a four-mile radius of the Site. Area well logs indicate that the sand and gravel units within the glacial outwash comprise the aquifer of concern used for drinking water in the vicinity of the Site (Appendix C). No contiguous confining layers are documented in the glacial drift within the study area. Bedrock is generally not used as a source of drinking water within the four-mile radius study area (Kanivetsky, 1978). For purposes of this report, the aquifer of concern is the glacial drift aquifer.

The Stern Rubber and Tool (American Rubber Products) facility is served by a city water main which extends along West Prairie Road. Drinking water at the Site is provided by city supply wells located approximately one and one-half miles southeast of the Site. The city of Staples utilizes three glacial drift aquifer wells to provide drinking water to a population of approximately 2,800. These wells are screened at depth intervals between 53 to 73 feet (Minnesota Department of Health [MDH], 1989).

The closest identified drinking well is at a private residence located approximately 500 feet northwest of the Site. Approximately 474 persons are estimated to be served by private wells located within three miles of the Site. The total drinking water population served by ground water wells within a three-mile radius of the Site has been previously estimated at 3,505 (E & E, 1991).

#### 3.3 Well Sample Locations

The ground water sampling strategy consisted of re-sampling the on-site deep glacial drift well, where toluene had previously been detected. Two residential wells were also re-sampled. In addition, several other wells that were not sampled by the previous SSI were sampled including a downgradient monitoring well, an upgradient well and four residential wells, and Staples municipal well #2. See Figures 3.1 and 3.2 for well sampling locations. Photographs of sampling locations are found in Appendix D.



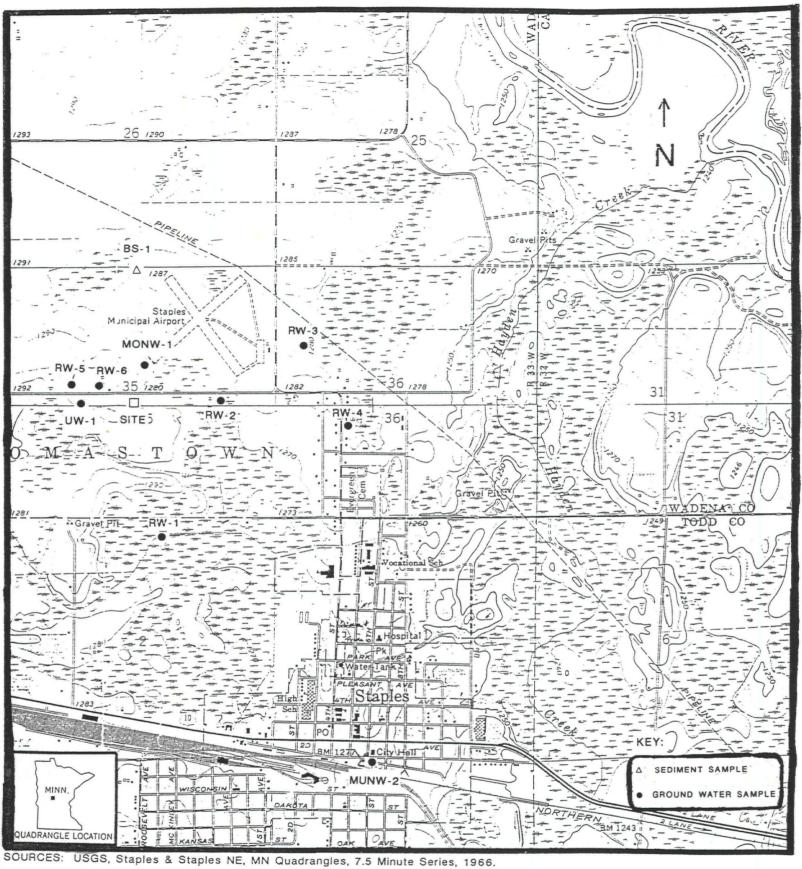




FIGURE 3.2 OFF-SITE SAMPLING LOCATIONS

The rationale for the sampling locations is presented below in Table 3.1.

TABLE 3.1 WELL SAMPLING LOCATIONS AND RATIONALE

#### SAMPLE LOCATION RATIONALE Nondrinking Wells \*Airport monitoring well 1 down-gradient control On-site well (deep) confirm previous toluene detection \*Ultra Color up-gradient control Drinking Wells \*Municipal well 2 possible targets L. Otteson possible targets possible targets Scheiterlein \*Corner (rental) possible targets possible targets \*Smith \*R. Otteson possible targets

\*Note: Wells not sampled by the previous SSI (E & E, 1991)

A summary of the wells sampled is presented below in Table 3.2. All wells sampled are open to the glacial drift aquifer (MPCA, 1992).

TABLE 3.2 SUMMARY OF SAMPLED WELLS

WELL NAME	LOCATION	DEPTH (feet)
MUNW-2	Municipal well 2	68
RW-1	Scheiterlein	25
RW-2	Corner (rental)	?
RW-3	Kittleson	60
RW-4	Smith	?
RW-5	R. Otteson	58
RW-6	L. Otteson	189
MONW-1	Airport	21
OSW-1	On-site (deep)	182
UW-1	Ultra Color	30

In addition to well sampling, several commercial/light industrial businesses near the Site were visited, and personnel were interviewed regarding the possible use/disposal of toluene and other solvents used by these operations.

Well sampling was conducted on August 6 and 7, 1991. Wells which were not recently used were purged prior to sampling. The airport monitoring well MONW-1 was purged with a Teflon bailer. Standard stabilization tests were run on purged water (Appendix E). An existing pump in the Ultra Color well (UW-1) was run to flush approximately 12 well volumes through the well system before sampling. All other wells had been recently pumped and were allowed to run a few minutes prior to sampling to flush the associated plumbing. Organic vapor field readings of purged water was performed using an OVM model 580S photoionization detector.

Ground water samples were preserved with hydrochloric acid. Ground water samples were collected, packaged, and shipped in accordance with EPA required procedures and the MPCA Site Assessment QAPP.

Because toluene was identified as the contaminant of concern by the previous SSI, ground water samples were analyzed for volatile organic aromatic (VOA) compounds only, in order to minimize analytical costs. For a complete list of the specific organic compounds analyzed see Appendix F. Laboratory data sheets are found in Appendix G. Analyses were performed by the University of Iowa and S-Cubed, both EPA contracted laboratories.

#### 3.4 Results

Toluene was found in the deep glacial drift on-site production well (OSW-1) at a level of 7J  $\mu$ g/l. See Table 3.3a. The J qualifier was assigned due to a low level estimate below the contract required quantification level of 10  $\mu$ g/l. Table 3.3b indicates that VOA compounds were not detected in drinking water wells; however, it should be noted that the analytical laboratory exceeded the 14-day holding time for these samples. Thus, these nondetections may be due to possible low bias resulting from the potential loss of volatile compounds.

Because of the holding time problem with drinking water samples as described above, follow-up sampling was conducted using the MDH analytical laboratory. Samples were collected on October 17, 1991 using MPCA sampling protocol. The nearest downgradient residential well (RW-2) and the deep on-site well (OSW-1) were re-sampled. In addition, two on-site shallow sandpoint wells (SP-1, SP-2) which were previously not sampled. Both of the sandpoint wells are approximately 20 feet in depth and are used for industrial cooling purposes only.

Table 3.4 presents the results from the follow-up sampling. See Appendix H for laboratory data sheets. Several volatile organic compounds were found in the wells. Toluene at a level of 210  $\mu g/l$  was found in one of the sandpoint wells (SP-1). Methyl isobutyl ketone was found in the other sandpoint well (SP-2), with a level of 5.7  $\mu g/l$ . Sandpoint SP-2 also displayed low levels of ethylbenzene, tetrachloroethene, and xylenes. Low levels of carbon tetrachloride were detected in all wells.

#### 3.5 Conclusions

A release of toluene to ground water from the Site is confirmed by sampling results. Previous and follow-up sampling results suggest a ground water release of methylphenols, methyl isobutyl, ketone, and xylenes from the Site may have also occurred.

Attribution of the toluene to Stern Rubber and Tool Company is based on the following observations: Toluene is not naturally found in ground water, toluene is stored and used on site; no other sources of toluene in the vicinity of the Site are known or suspected; previously detected high levels of toluene in the on-site well suggest an on-site source; and toluene has allegedly been dumped and spilled on site.

It is noted that repair of a cracked well casing on the on-site deep glacial drift well (OSW-1) in July 1991 may explain why the levels of toluene in this well have dropped significantly in subsequent sampling events. It is postulated that a crack in the casing may have allowed toluene near the water table to contaminate the deep well (Nova, 1992b).

The relatively low level detection of carbon tetrachloride, ethyl benzene, and tetrachloroethane do not appear to clearly establish a release to ground water of these compounds with the sampling data presently available.

Subsequent analysis of ground water and soil as part of voluntary interim remedial actions, suggest off-site migration of a toluene plume is occurring in a northeasterly direction from the Site (Nova, 1992c).

# TABLE 3.3a SUMMARY OF CHEMICAL ANALYSIS FOR ORGANIC COMPOUNDS - RAS GROUND WATER \*

SAMPLE NUMBER	RO3	RO4	D02	S09	R05	S12	S16
DATE	8/6/91	8/6/91	8/6/91	8/6/91	8/7/91	8/7/91	8/7/91
TIME	8:30	18:30	20:10	20:15	10:05	11:15	13:30
SAMPLE LOCATION	Trip	Bailer	MONW-1	MONW-1	Field	OSW-1	UW-1
	Blank	Blenk	Airport	Airport	Blank	On-Site Well	Ultra Color
ORGANIC TRAFFIC REPORT #	ENS 24	ENS 25	ENS 27	ENS 28	ENS 29	ENS 31	ENS 34
COMPOUND DETECTED (ug/L)							
VOLATILE ORGANICS							
Toluene						7 J	

SEMI-VOLATILE ORGANICS

Not Analyzed

PESTICIDES/PCB'S

Not Analyzed

- \* Laboratory Performing Analysis: University of Iowa, Iowa City, Iowa.
- -- Undetected.
- J Compound was detected but numerical value is estimated because certain sample preparation or instrument QC criteria were not met.

# TABLE 3.3b SUMMARY OF CHEMICAL ANALYSIS FOR ORGANIC COMPOUNDS - SAS GROUND WATER \*

SAMPLE NUMBER	RO1	RO2	D01	S01	S02	S03	S04	S05	S06	S07
DATE	8/6/91	8/6/91	8/6/91	8/6/91	8/6/91	8/6/91	8/6/91	8/6/91	8/6/91	8/6/91
TIME	8:30	11:45	12:00	12:10	13:55	16:15	14:45	15:15	16:50	17:25
SAMPLE LOCATION	Trip	Field	Dup	MUNW-2	RW-1	RW-2	RW-3	RW-4	RW-5	RW-6
	Blank	Blank	S01	Staples	Scheiterlein	Corner Rental	Kittleson	Smith	R. Otteson	L. Otteson
ORGANIC TRAFFIC REPORT #	EKL 93	EKL 27	EKL 28	EKL 29	ENS 05	ENS 18	ENS 19	ENS 20	ENS 21	ENS 22
COMPOUND DETECTED (ug/L)										
VOLATILE ORGANICS Holding times exceeded in all samples.	UJ	UJ	UJ <sup>·</sup>	•	UJ	•	UJ	υJ	υJ	υJ

#### SEMI-VOLATILE ORGANICS

Not Analyzed

PESTICIDES/PCB'S

Not Analyzed

- \* Laboratory Performing Analysis: S-Cubed, San Diego, California.
- UJ Undetected estimate, a low bias is possible due to exceedence of sample holding times and a potential loss of volatile compounds.
- ^ Sample not analyzed due to laboratory instrument failure.

TABLE 3.4
SUMMARY OF CHEMICAL ANALYSIS FOR
ORGANIC COMPOUNDS - MDH WATER \*

SAMPLE NUMBER	ТВ	RW-2	OSW-1	SP-1	SP-2
DATE	10/17/91	10/17/91	10/17/91	10/17/91	10/17/91
TIME	8:30	11:35	12:30	13:00	13:30
SAMPLE	Trip	Res	On-site	Sand-point	Sand-point
LOCATION	Blank	Well #2	Deep	Well #1	Well #2
		Corner	Well	(Southwest)	(Southeast)
		Rental			
COMPOUND DETECTED (ug	g/L)				
VOLATILE ORGANICS					
Carbon Tetrachloride		0.2	0.2	0.2	0.2
Ethyl benzene					0.3
Methyl isobutyl ketone				5.7	-
Tetrachloroethene		<del></del> ·	<b></b> .		0.2
Toluene			19	9.6	210
m + p-Xylene				<b></b>	1.5
o-Xylene	••		_	·	0.3

<sup>\*</sup> Laboratory Performing Analysis: State of Minnesota Department of Health (MDH).

<sup>--</sup> Undetected.

#### 4.0 SURFACE WATER PATHWAY

#### 4.1 Hydrologic Setting

The Site is located within the Crow Wing River watershed which drains into the Mississippi River. Topography of the watershed is slightly- to moderately-undulating with a local relief of about 50 feet. The water budget for the watershed is as follows (Lindholm, et al., 1972):

precipitation = evapotranspiration + run-off + storage and underflow 26.4 inches 22.5 inches 3.9 inches 0

The nearest natural surface body water is Hayden Creek, a tributary of the Crow Wing River, located approximately one and one-fourth miles east of the Site. Wetlands are located about one-half mile north, and approximately one-eighth mile south of the Site (E & E, 1991). A small man-made discharge pond is located on site to collect the discharge of noncontact cooling water from plant operations.

#### 4.2 Surface Water Targets

Site topography prevents surface water run-off from entering the creek or wetlands via a direct route. Surface water is not used for drinking purposes within a four-mile radius of the Site (E & E, 1991). Game fish have been caught in the on-site discharge pond (MPCA, 1992).

#### 4.3 Surface Water/Sediment Sample Locations

SAMPLE LOCATION

The SSI did not sample surface water. Surface water samples, as part of the ESI, were collected from the on-site discharge pond and a discharge pipe leading from the factory to the pond. Sediment was collected from the on-site pond, as well as from the wetland north of the Site to serve as a background sample. See Figures 3.1 and 3.2 for sampling locations. Appendix D presents photographs of sampling locations.

The rationale for the sampling locations is presented below in Table 4.1.

TABLE 4.1 SURFACE WATER/SEDIMENT SAMPLING LOCATIONS AND RATIONALE

# Surface Water on-site pond water discharge water Sediment on-site pond sediment off-site pond sediment off-site pond sediment background sample

RATIONALE

#### 4.4 Results

Because toluene was identified as a major contaminant of concern by the previous SSI, surface water and sediment samples were analyzed for VOA compounds only, in order to minimize analytical costs. For a complete list of the specific compounds analyzed see Appendix F. Laboratory data sheets are found in Appendix G. Analyses of surface water and sediment samples were performed by the University of Iowa, an EPA contracted laboratory.

Table 4.2a indicates a low level of toluene was detected in water discharged to the pond from the plant operations. Table 4.2b shows sediment from the pond displayed low levels of 1,2-dichloroethane. Acetone was found in the discharge pond as well as the off-site background sediment sample.

#### 4.5 Conclusions

Sampling results do not clearly indicate a release to on-site surface water or sediment. The low levels of 1,2-dichloroethane reported in the on-site pond sediment sample is below the contract required quantification level. The presence of acetone in both on-site and off-site pond sediment suggests a possible laboratory contaminant.

# TABLE 4.2a SUMMARY OF CHEMICAL ANALYSIS FOR ORGANIC COMPOUNDS - RAS SURFACE WATER \*

SAMPLE NUMBER	RO3	R05	S10	S11
DATE	8/6/91	8/7/91	8/7/91	8/7/91
TIME	8:30	10:05	10:15	10:25
SAMPLE LOCATION	Trip	Field	SW-1	DW-1
•	Blank	Blank	Discharge	Discharge
			Pond	Pipe
ORGANIC TRAFFIC REPORT #	ENS 24	ENS 29	ENS 23	ENS 30
COMPOUND DETECTED (ug/L)				
VOLATILE ORGANICS				
Toluene				<b>2</b> J

SEMI-VOLATILE ORGANICS

Not Analyzed

PESTICIDES/PCB'S

Not Analyzed

<sup>\*</sup> Laboratory Performing Analysis: University of Iowa, Iowa City, Iowa.

<sup>--</sup> Undetected.

J - Compound was detected but numerical value is estimated because certain sample preparation or instrument QC criterial were not met.

# TABLE 4.2b SUMMARY OF CHEMICAL ANALYSIS FOR ORGANIC COMPOUNDS - RAS SEDIMENT \*

SAMPLE NUMBER	S14	S15
DATE	8/7/91	8/7/91
TIME	10:40	9:15
SAMPLE LOCATION	oss-1	BS-1
	Discharge Pond	Background
	Sediment	Sediment
ORGANIC TRAFFIC REPORT #	ENS 33	ENS 26
COMPOUND DETECTED (ug/kg)		
VOLATILE ORGANICS		
Acetone	21	18
1,2-dichloroethane	<b>5</b> J	
SEMI-VOLATILE ORGANICS	•	
Not Analyzed		

PESTICIDES/PCB'S

Not Analyzed

<sup>\*</sup> Laboratory Performing Analysis: University of Iowa, Iowa City, Iowa.

J - Compound was detected but numerical value is estimated because certain sample preparation or instrument QC criteria were not met.

<sup>--</sup> Undetected.

#### 5.0 SOIL EXPOSURE AND AIR PATHWAYS

#### 5.1 Background

Previous surficial soil analyses conducted as part of the SSI indicated a release of bis-(2-ethylhexyl) phthalate and zinc attributable to Site operations (E & E, 1991). No additional soil testing was conducted as part of this ESI. In early March 1992, approximately 150 cubic yards of soil was removed and stockpiled on-site as part of an interim remedial action (Nova, 1992b).

No air samples were collected as part of the initial SSI (E & E, 1991). No airborne particulates were observed on-site. Organic vapor field readings of on-site ground water, soil, and outdoor air during the ESI were not detected above background (MPCA, 1992). Thus, no air samples were collected as part of this ESI.

#### 5.2 Targets

Site operations employ 79 workers. Approximately 126 people live within a 1-mile radius of the Site (E & E, 1991).

#### 5.3 Conclusions

In-place surficial soil and excavated stockpiled soil contain toluene, bis-(2-ethylhexyl) phthalate, zinc and other chemical constituents (E & E, 1991; Nova, 1992d). There is a potential for workers and nearby residents to come into contact with these compounds.

The release of contaminants to air is not considered a significant pathway.

#### 6.0 SUMMARY AND CONCLUSIONS

The Stern Rubber and Tool Company ESI gathered data to evaluate the Site as a potential candidate for the NPL. To accomplish this task, samples were collected and analyzed for three on-site production (nondrinking) wells, six residential wells, an up-gradient well, a down-gradient monitoring well, one municipal well, on-site pond water and sediment, and off-site pond sediment. In addition to the field work described above, interviews were held with representatives from the Site, as well as for nearby commercial facilities. Data from previous and on-going investigations of the Site was also researched and evaluated.

An observed release of toluene from the Site to ground water has been established. The nearest drinking water well is located approximately 500 feet northwest of the Site. A population of 3,505 is estimated to be served by residential or municipal drinking wells drawing from the aquifer of concern within a three-mile radius of the Site. To date, no drinking water wells have been found to be contaminated.

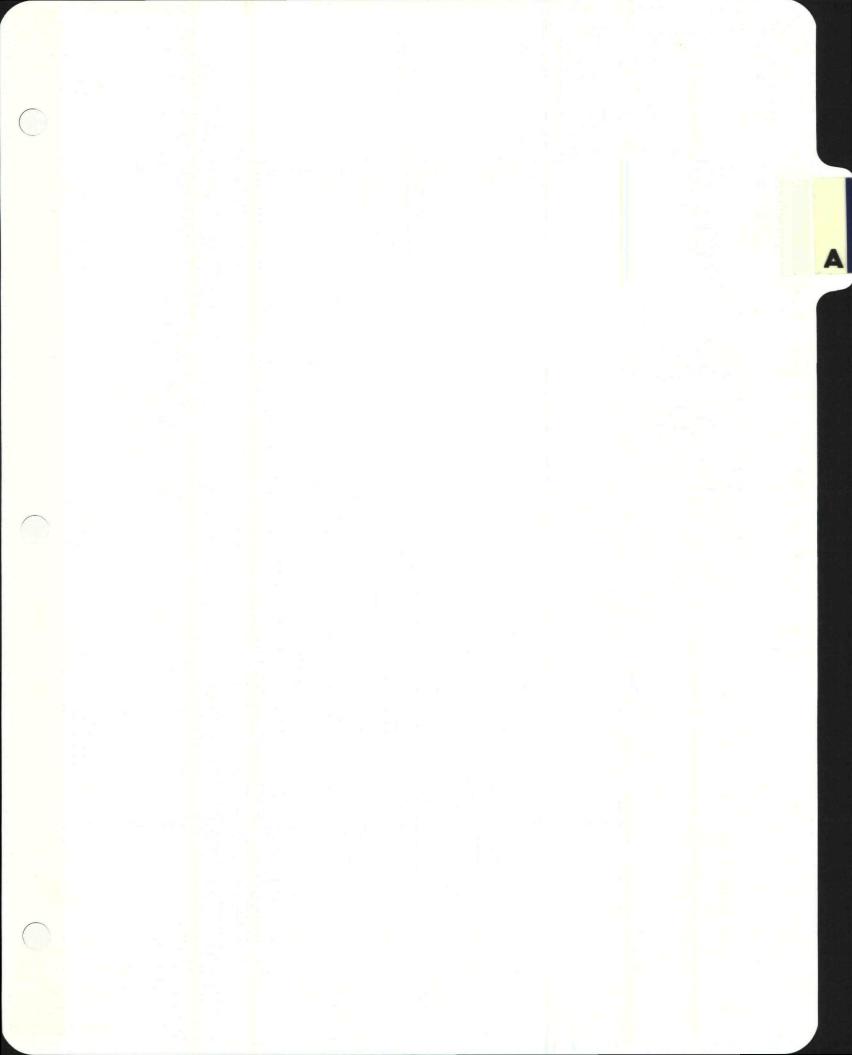
Sampling results indicate there has been a release of toluene, bis-(2-ethylhexyl) phthalate, and zinc to soil from the Site. There is a potential for soil exposure of these constituents to workers and area residents.

The potential release of contaminants from the Site to air is not considered a significant pathway.

On-going voluntary interim remedial actions including soil excavation and a proposed ground water treatment system are expected to address concerns of potential impacts to human health and the environment. Continued monitoring of nearby residential wells is recommended.

#### 7.0 REFERENCES

- Ecology and Environment, Inc., 1991 "Screening Site Inspection Report for Stern Rubber and Tool Company, Staples, Minnesota," April 30, 1991.
- Hobbs, H.C. and Goeble, J.E., 1982. "Geologic Map of Minnesota Quaternary Geology," Minnesota Geological Survey, State Map Series S-1.
- Kanivetsky, R., 1978. "Hydrogeologic Map of Minnesota, Bedrock Hydrogeology," Minnesota Geological Survery, State Map Series S-2.
- Lindholm G.F., E.L. Oakes, D.W. Ericson, and J.O. Helgsen, 1972. "Water Resources of the Crow Wing River Watershed, Central Minnesota," U.S. Geological Survey, Hyrdrologic Investigations Atlas HA-380.
- Minnesota Department of Health, 1989. "Public Water Supply Data 1989," Volumes 1 and 2, Division of Environmental Health.
- Minnesota Pollution Control Agency, 1992. Site Assessment Unit files, 520 Lafayette Road, St. Paul, Minnesota, 55155.
- Morey G.B., et al., 1981. "Geologic Map of Minnesota, East-Central Minnesota," Minnesota Geological Survey.
- Nova Environmental Services, Inc., 1992a. "Source and Extent of Toluene Release," Draft Technical Memorandum, Februry 19, 1992.
- Nova Environmental Services, Inc., 1992b. "Toluene Release Investigation and Interim Remedial Actions," Technical Memorandum, February 26, 1992.
- Nova Environmental Services, Inc., 1992c. "Results of Ground Water Characterization," Draft Technical Memorandum, March 11, 1992.
- Nova Environmental Services, Inc., 1992d. "American Rubber Products Investigation Report and Corrective Action Plan," March 27, 1992, Project No.: M91-M28.
- Stahnke, Jerry, 1992. Personal communication March 16, 1992 and subsequent dates, Minnesota Pollution Control Agency, Property Transfer Technical Assisstance Unit, 520 Lafayette Road, St. Paul, Minnesota, 55155.
- U.S. Congress, 1980. Comprehensive Environmental Response, Compensation, and Liability Act ot 1980. Public Law 96-510.
- U.S. Congress, 1986. Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499.
- U.S. Environmental Protection Agency, 1990a. Hazard Ranking System; Final Rule, 55 FR 51532, December 14, 1990.
- U.S. Environmental Protection Agency, 1990b. National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, 55 FR 8666, March 8, 1990.



#### TECHNICAL MEMORANDUM

TO: American Rubber Products, Inc. Remedial Investigation File

FROM: Bob Havrilak, Nova Environmental Solvices, Inc.

DATE: February 19, 1992

RE: Source and Extent of Vivene Release

On February 7, 10, and 11, Nova personnel were at the American Rubber Products, Inc. facility in Staples to investigate the suspected uncontrolled release of toluene. During the three day effort:

• a facility inspection was conducted to assess current use and handling practices of toluene, and the potential for release,

• interviews with key plant personnel were conducted to obtain information on the historic use and handling of toluene,

• an assessment of the water supply systems was conducted to determine potential for worker exposure through ingestion of toluene contaminated groundwater, and

• a field investigation was conducted to identify releases to soil, and ground water contamination.

The observed handling of toluene currently in practice appears to offer little opportunity for release to the environment. There was less than ten gallons of toluene in use during the facility inspection. The toluene was contained in a shop area in two metal lidded safety containers. The shop area is built with concrete slab on grade floor, without floor drains.

The interviews conducted identified past toluene use and handling procedures that created potential for releases to occur. This information was used to identify potential release areas for consideration during the field investigation.

The plumbing and septic systems were evaluated. The on-site wells are plumbed to a water line providing cooling water to processing equipment. The cooling water line is separate from the general municipal water supply plumbing. Cooling water is discharged to the pond south of the buildings, and the general water supply is plumbed to a septic system. There were no floor drains observed in the processing facility area.

A soil gas reconnaissance was conducted around the perimeter of the buildings. Samples of the gases from the vadose zone were analyzed with a mobile Gas Chromatograph (GC). The reconnaissance detected high levels of toluene in the soil gases in the area immediately north of the pond. The highest concentration measured was 1201.8 ppm in the vicinity of an exit door from the western building immediately northwest of the pond. The concentrations drop gradually to the east, suggesting migration in an easterly direction. This is consistent with the surface grade, and the reported easterly groundwater flow direction. The attached Figure summarizes the data from the soil gas reconnaissance.

Groundwater was identified near the pond at a depth of 4 to 5 feet prohibiting soil gas collection. A soil sampling probe was used to collect samples of saturated soil in these areas. The samples were analyzed using head space techniques with the GC. Toluene was measured the saturated soil at the location of the highest soil gas measurement at 118.2 ppm. The concentrations graded to the low part per billion range in an easterly direction. The soil probe sample results are also summarized on the attached Figure.

An interview with one of the plant personnel identified that prior to 1983 parts degreasing had been done outside the facility. Three 55 gallon galvanized steel troughs containing toluene had been staged near an exit door adjacent to the northwest corner of the pond. This location coincides with the highest levels measured for soil gas and saturated soil in the field investigation. Parts were dipped into the container and air dried on pallets nearby. When the toluene was dirty, it was transferred to barrels for disposal for off-site disposal. A pump was provided to workers to accomplish this task. It was not the policy of the company to dump the toluene onto the ground, however it is probable that spillage occurred during the filling and emptying the troughs, dipping and removing the parts, and stacking the toluene rinsed parts on the pallets. It is also possible that worker mishandling of the toluene resulted in releases.

Measured concentrations, and the expected groundwater flow direction supports the conclusion that toluene has leached into the groundwater and migrated to generally towards the east. The reduced concentrations measured in both soil gas and saturated sand samples suggests that natural attenuation mechanisms of dispersion and degradation of toluene have reduced the levels of concentration dramatically within hundreds of feet of the release area.

#### INTERIM REMEDIAL ACTION

#### RELEASE AREA

In order to eliminate continued release of residual toluene in the soil to groundwater, the contaminated soil from the release area will be excavated to the water table. The limits of the excavation will confined by the adjacent buildings, and the pond, and will be and Photoionization Detector readings. The soils will be stockpiled on plastic south of the buildings in a field owned by ARP for evaluation and appropriate disposition. It is estimated that approximately 150 yards of material will be removed.

#### GROUNDWATER MIGRATION

A row of drive point wells will be installed along the eastern edge of the property to develop projections on the lateral and vertical extent and concentration of the toluene groundwater plume. Starting at a point directly east of the release area wells will be installed on 30 foot centers in a north and south direction, until the samples collected and analyzed return non-detects. As the wells are driven, they will be developed and sampled at 5 foot intervals to determine the vertical extent. The wells will be driven to total depth of 20 feet.

A driven well using the same technique will also be placed in the release area to assess groundwater contamination.

Based on the concentrations of the toluene in the series of wells, an assessment of need for corrective action will be developed. A potential corrective action would be air sparging using the driven wells along the boundary and the release area to enhance volatilization and degradation.

The intent of the investigation and interim action of sparging is to eliminate any further offsite migration.



S.B. Cummings President J.E. Findley Chief Executive Officer

RECEIVED

MAR 0 2 92

MPCA, Ground Water & Solid Waste Div

February 27, 1992

Mr. Gerry Stahnke Minnesota Pollution Control Agency PTTA Program 520 Lafayette Road St. Paul, MN 55155

> RE: AMERICAN RUBBER PRODUCTS SITE MN D045973419

Dear Mr. Stahnke:

Enclosed is the revised technical memorandum we discussed in our February 20, 1992 meeting. We have included in the document the points you raised at the meeting. Please review the materials. If we have misinterpreted any items agreed to, please notify me immediately.

We are implementing the Interim Remedial Measures the week of March 1. Around mid March, we will ask for another meeting to review the findings. We expect to have summary report in your hands before the end of March, and will make a verbal presentation of the findings with the submittal. At that time we will ask for a formal response to the corrective action program.

On behalf of our client and Nova, thank you for your very prompt and cooperative responses. We recognize the approach taken in this effort is quite different than the formal protocol normally associated with work in the PTTA Program, and really appreciate your consideration.

Sincerely,

NOVA ENVIRONMENTAL SERVICES, INC.

Robert J., Havrilak, P.E.

Vice President

**Environmental Management** 

Services Division

an equal opportunity employer

#### TECHNICAL MEMORANDUM

TO: American Rubber Products, Inc. Remedial Investigation File

FROM: Bob Havrilak, Nova Environmental Services, Inc. /

DATE: February 26, 1992

RE: Toluene Release Investigation and Interim Remedial Actions

On February 7, 10, and 11, Nova personnel were at the American Rubber Products, Inc. (ARP) facility in Staples, Minnesota to investigate the suspected uncontrolled release of toluene. During the three day effort:

- a facility inspection was conducted to assess current use and handling practices of toluene, and the potential for release;
- interviews with key plant personnel were conducted to obtain information on the historic use and handling of toluene;
- an assessment of the water supply systems was conducted to determine potential for worker exposure through ingestion of toluene contaminated ground water, and
- a field investigation was conducted to identify releases of toluene to soil.

The observed handling of toluene currently in practice appears to offer little opportunity for release to the environment. There was less than ten gallons of toluene in use during the facility inspection. The toluene was contained in a shop area in two metal lidded safety containers. The shop area is built with concrete slab on grade floor, without floor drains.

The interviews identified past toluene use and handling procedures that created potential for releases to occur. This information was used to identify potential release areas for consideration during the field investigation.

The plumbing and septic systems were evaluated. The on-site wells are plumbed to a water line providing cooling water to processing equipment. The cooling water line is separate from the general municipal water supply plumbing. The on-site wells are not used to supply water for general use or drinking. Cooling water is discharged to the pond south of the buildings, and the general water supply is plumbed to a septic system. There were no floor drains observed in the processing facility area.

American Rubber Products, Inc. Remedial Investigation File February 26, 1992
Page 2

A soil gas reconnaissance was conducted around the perimeter of the buildings. The locations of the sampling points are identified on Figure 1. Samples of the gases from the vadose zone were analyzed with a mobile Gas Chromatograph (GC) for Toluene. The reconnaissance detected high levels of toluene in the soil gases in the area immediately north of the pond. The highest concentration measured was 1201.8 parts per million (ppm) at sampling point SG-7 near the vicinity of an exit door from the western building immediately northwest of the pond. The concentrations drop gradually to the east, suggesting migration in an easterly direction. This is consistent with the surface grade, and the reported easterly ground water flow direction.

Ground water ranged from 5 to 7 feet below grade across the site. Native soil at the site consists of fine to medium sand to an unknown depth. Ground water was identified near the pond at a depth of 4 to 5 feet and interfered with soil gas collection. A soil sampling probe was used to collect samples of saturated soil in these areas. The samples were analyzed using head space techniques with the GC. The highest level of toluene measured in the saturated soil was 118.2 ppm at SG-7, coincidental with the highest soil gas reading. The concentrations graded to the low part per billion range in an easterly direction. The soil probe sample results are also summarized on Figure 1.

Interviews with plant personnel identified that prior to 1983 parts degreasing had been done outside the facility. Three 55 gallon galvanized steel troughs containing toluene had been staged near an exit door adjacent to the northwest corner of the pond. The location of the degreasing area surrounds sampling point SG-7. Parts were dipped into the container and air dried on pallets nearby. When the toluene was dirty, it was transferred to barrels for disposal for off-site. A pump was provided to workers to accomplish this task. It was not the policy of the company to dump the toluene onto the ground, however there was opportunity for spillage during the filling and emptying of the troughs, dipping and removing the parts, stacking the toluene rinsed parts on the pallets, and worker mishandling of the toluene.

Measured concentrations, and the expected ground water flow direction supports the conclusion that toluene has leached into the ground water and migrated in a direction generally towards the east. The reduced concentrations measured in both soil gas and saturated soil samples suggests that natural attenuation mechanisms of dispersion and degradation of toluene have reduced the levels of concentration dramatically within a hundred feet of the release area.

American Rubber Products, Inc. Remedial Investigation File February 26, 1992 Page 3

#### **INTERIM REMEDIAL MEASURES (IRM)**

#### SOURCE AREA REMOVAL

In order to eliminate the continued release of toluene to the ground water, contaminated soil underlying the former degreasing area will be excavated to the water table. The lateral extent of the excavation will be limited by the adjacent buildings and the pond, however, the removal action will be effective in removing a significant portion of the toluene contaminated soil. The vertical extent will be limited by depth to water. Only unsaturated soil will be excavated. Excavation activities will be guided by a Jar Head Space Analysis using a Photoionization Detector, and supported by a field GC. Samples of the remaining side walls of the excavation will be collected for laboratory analysis for toluene prior to backfilling.

Excavated soil will be temporarily stockpiled on ARP property south of the buildings. The property is not used, and is surrounding by open fields. An estimated 150 cubic yards of material will be excavated and stockpiled. The soil will be placed on reinforced plastic sheeting and covered with plastic sheeting, pending analysis for disposal parameters and final disposition to an appropriate disposal/treatment facility.

#### **GROUND WATER MITIGATION**

The full extent of ground water contamination is not known, however it is assumed that ground water on the property has been impacted by toluene releases. It is the intent of this IRM to measure the levels of contamination at the property boundary, and install an insitu treatment barrier at the property boundary to prevent further migration.

The in-situ treatment methodology recommended for the IRM is aquifer air sparging. This method injects air into the contaminated zone of the aquifer. Volatile organic compounds are entrained in the air bubbles and carried to the vadose zone. The gases will be allowed to vent naturally to the surface because of the shallow depth of ground water (approximately 5 feet) and the sandy soil present at the site.

Toluene is ideally suited to this technology because of its volatility characteristics, with a Henrys Law constant ( $K_H$ ) of 6.3 x  $10^{-3}$  atm-m<sup>3</sup>/mole. Chemicals with  $K_H > 10^{-5}$  are highly susceptible to air stripping. The injected air will also enhance biodegradation of the toluene.

As shown in Figure 2, a row of drive point sparging wells will be installed along the eastern edge of the property to act as a barrier to off-site migration of ground water impacted by toluene. The lateral and vertical extent of contaminated ground water will be assessed during the installation of the sparging points. Concentrations of the ground water will be measured during the installation of the sparging points by developing and sampling the sparge wells at five foot intervals during their installation to a depth of approximately 20 feet.

American Rubber Products, Inc. Remedial Investigation File February 26, 1992
Page 4

Starting at a point directly east of the release area wells will be installed on 40 foot centers in a north and south direction. Approximately 10 points will be installed over a 400 foot length of the property boundary. An additional sparging point will be placed immediately east of the release area.

#### **ADDITIONAL INVESTIGATION**

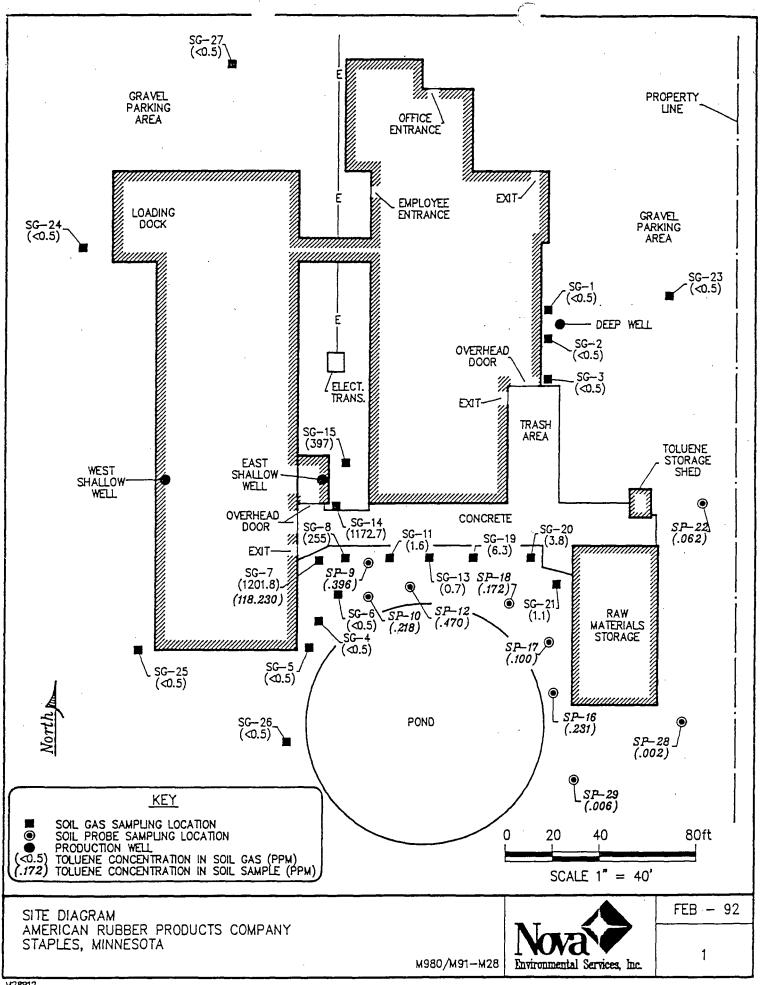
After the sparging system has been installed, the extent of a toluene plume off the property will be assessed. This information will be used to assess the potential impact on downgradient ground water users.

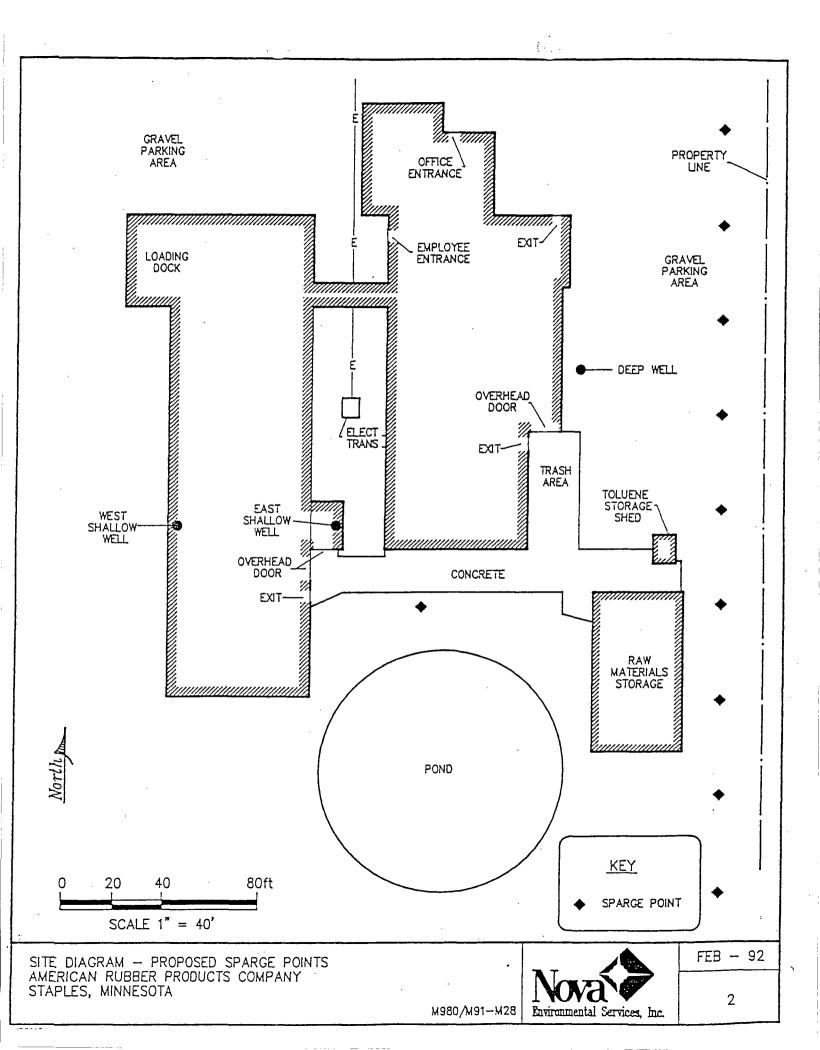
A series of temporary sampling points will be used to collect ground water samples along a line through the center of the contaminant plume in the direction of ground water flow. The samples will be collected using a hydropunch.

#### FINAL CORRECTIVE ACTION

All information from the investigative effort and the corrective action will be assembled into an assessment report. Based on the concentrations of the toluene in the series of wells, an assessment of need for additional corrective action will be developed. Recommendations for action beyond the IRM effort will be made if necessary. If data supports no further action necessary, a request for no further action will be made.

cc: Gerry Stahnke - MPCA
Mike Connolly - MPCA
Terry Stern - American Rubber Products





#### DRAFT TECHNICAL MEMORANDUM

TO: American Rubber Products File

FROM: Bob Havrilak, Nova Environmental Services, Inc.

DATE: March 11, 1992

RE: Results of Groundwater Characterization

The week of March 2, a field crew was mobilized to the American Rubber Products facility to implement the conjunctive Investigation/Corrective Action effort described in the February 26, 1992 Technical Memorandum.

#### SOURCE AREA EXCAVATION

Approximately 150 cubic yards of soil was removed from the identified source area. Soil was excavated until PID readings on the soil were less than 50 ppm, or until a cultural feature, i.e.: buildings, the pond, or utilities, prevented further excavation. Soil was excavated vertically to the water table. Samples of the side walls of the excavation were collected prior to backfilling for laboratory analyses. The results are unavailable at this time. Samples of water from the bottom of the excavation were tested with a Gas Chromatograph in the field, and yielded toluene measurements in excess of 20,000 ppm. This confirmed the suspicion that groundwater was impacted by toluene handling the former degreasing area. The excavated soil was temporarily stockpiled on the ARP property south of the buildings. The soils were placed on reinforced plastic, and were covered with reinforced plastic. Samples of the soil will be collected and analyzed, prior to the development of a plan for disposal.

#### GROUNDWATER INVESTIGATION

Eighteen drive points were installed across the northeastern quadrant of the property in an attempt to identify and map the extent of toluene impacted groundwater. The drive points were driven in stages to specified depths, and groundwater samples were collect from each discrete interval. The sample depth locations from which samples were collected are:

Interval	Α	at the water table interface
Interval	В	12 to 15 feet,
Interval	С	16 to 19 feet,
Interval	D	21 to 24 feet, and
Interval	E	26 to 29 feet.

The water samples were analyzed in the field with the GC.

The casing elevations of the drive points were surveyed, water levels measured, and groundwater contour maps developed. Chemical characterization of the groundwater identified a zone of toluene contaminated groundwater extending from the source area to the northeast corner of the ARP property. The vertical extent of the impacted groundwater is limited to the upper 20 feet of a surficial aquifer bounded below by a clay layer roughly 50 feet thick starting at approximately 25 to 30 feet below the surface.

The pond elevation was measured at 1.4 feet above the groundwater surface 40 feet away from the pond, and confirms the mounding effect created by discharging cooling water to the pond. Operation of the shallow wells was shown to create a cone of depression in the surficial aquifer, and has probably slowed contamination migration up until 1989 when the deep well was installed in the lower aquifer.

Interpretation of the groundwater maps indicates groundwater in the shallow surficial aquifer is flowing to the Northeast with a hydraulic gradient of approximately 0.005 ft/ft across the ARP property, with the gradient appears to falling near the property edge. The projected flow direction is consistent with the mapped extent of the contaminate plume moving in a northeasterly trend.

The known lateral extent of the contaminated groundwater is a plume roughly 50 feet to 80 feet wide trending N-NE across the property from the source area. The aerial extent of the plume in a northeasterly direction is not known at this time. The projected velocity of groundwater has been approximated to range between 21 feet/year and 200 feet/year. Assuming a worse case scenario of a fifteen year migration period contaminated groundwater could have migrated between 315 feet and 3000 feet off the property in the shallow aquifer, independent of cultural and geologic structure influences. It is an opinion that the approximations of the frontal edge of the plume in the hundreds of feet rather than thousands of feet are realistic expectations.

#### DEEP WELL CONTAMINATION

Mr. Marv Giza of Giza Plumbing was interviewed to resolve the issue of the coincidental well casing repair and the disappearance of the toluene from water samples taken from the deep well. Apparently the pitless adapter was attached to 6" plastic well casing that had a crack in it. The weight of the drop pipe to the pump, coupled with the motor torque distorted the casing and the crack. The static water level inside the deep well casing has been measured between 30 and 40 feet below the surface. While the pump is operating, the drawdown in the deep well creates a pumping water level greater than 100 feet below the surface. The water table in the shallow water outside the casing would have fluctuated between 4 and 8 feet below the surface, across the interval of the opening created by the crack, allowing water to flow into the casing. If toluene impacted groundwater were present in the area of the well, it would have migrated to, and into the casing. The chemical would subsequently have appeared seasonally in the deep well water samples collected until the casing was repaired or until the water table in the shallow aquifer dropped below the casing crack.

#### OFFSITE GROUNDWATER MIGRATION

Groundwater in the shallow aquifer is impacted. A preliminary survey of the land usage in the direction of groundwater flow identified the some industrial usage, and the Staples Airport. An evaluation of groundwater usage by the property owners has not been conducted yet to determine potential receptors of a groundwater plume. An investigation will be conducted in the area NE of the ARP property assess the extent of groundwater contamination and potential receptors.

C

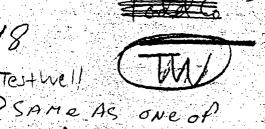
WATER WELL RECO					
County Name Widera			innereta Sta		e e e
Township Name! Township Numb	er Range Number   Sec	tion No. Fra	ction N/	NI	4. WELL DEPTH (completed) Dute of Completion
Thomastown 134		35	"/E	1/10	182 n 10-20-88
Distance and Direction from Road Intersection or Street A	ddress and City of Well	Location		*****	5. DRILLING METHOD
					1 Cable tool 4 Reverse 70 Driven 100 Dug
Show exact location of well in section grid with "X,"		Sketch	map of we	l location.	2C) Hollow rod 5C) Air 8C) Bored . 11C)
Addition	Name				30 Rotary 60 Jetted 90 Power lauger
	į				a DRILLING FLUID Bent
Block No	umber			-	7. USE
"Laddellidit					1 Domestic 4 Monitoring 80 Heat Pump
19 mai Lot Nu	unber				2 Inrigation 50 Public 90 Industry 30 Test Well 60 Municipal 100 Commercial
\	ļ				70 Air Conditioning 110
1 5 4					8. CASING HEIGHT Above Below HOLE DIAM.
2. PROPERTY OWNER'S NAME	11. 0-				I Black 40 Threaded Surface (t.
Steerys Rub	wes co				2 Galv. SO Welded Drive Shoe? Yes No.
Staples.	Men	37	100	G)	Phasis 60 162 ft. Weight 5 100/ft. 2m. to 180
1 FORMATION LOG		TAPONESS OF	Fron	<del>/</del>	in, toft. Weightlba/ftin, taft.
7 PORMATION BOS 7 7	COWA	TAPONESS OF FORMATION	FROM	то	in, toft. Weightlbs_/ftin. toft.
\ \assA	13	5		18	9. SCREEN / Or open hole
A n			اد	1.7-11 _	Make to present from the la th.
Clay	.29	H	128	84	Type Starculess Dia 7 PS
700	, 11		7		Slow/Gause / Cl. Length FITTINGS:
Saux	5	_5_	84	87	Set between Land 1821t.
Policy	И	11	02	;;;	10. STATIC WATER LEVEL 10 10 CC
Berg		M	87	16/	10. STATIC WATER LEVEL  10. STATIC WATER LEVEL  11. Of below   above   Date Measured 1070-88
Jan Of Sturker	LI.	5	1/ /	101	II. PUMPING LEVEL (below land surface)
Sacra Carlety)			161	182	tt. stor g.p.m.
			1		
			<u> </u>		12. HEAD WELL COMPLETION Maas model GJ-2
			ļ		20 Basement offset 3Cl At least 12" above ground
					13. WELL GROUTED?
					Yes No
1					19 Neat Cement 20 Bentonite 30
ļ			<b> </b>	- 643	Grout material Course from 10 to 40 It. cu. yds
	<del></del>				
}					14. NEAREST SOURCES OF POSSIBLE CONTAMINATION  10. Det Substitute of the section
					Well disinfected upon completion? XYes
					Date installed Not installed
					Manufacturer's name
	į				Model number HP Volts
					Length of drop pipeft, capacityg.p.m.
	<b>F</b>	Enr	11 /		Material of drop pipe
			<del>                                     </del>	=++	Type: 1   Submersible   3   L.S. Turbine   5   Reciprocating
	1				20 Jet 40 Centrifugal 60
	L.	UL 1	1 199		16. EXISTING WELLS Unused well on property?   Yes   Who
Use a second shows a					Abandoned
17. REMARKS, ELEVATION, SOURCE OF DATA, etc.	•	AMERI	CAN	1	18. WATER WELL CONTRACTORS CERTIFICATION
	RUBI	BER PI	RODE	لعدور	This well was drilled under my jurisdiction and this report is true to the best of my
					knowledge and belief.
					Mortalan Obelling 44397
j				Ì	Address KT Kanall Miller 56475
]					D. A. A. A. I
					Signed Authorized Representative
					Stall Fargacecker Done 7-9-91
MURK CO	IDV				Name of Driller
1 MIJISK [ []	IP ₹	ı		;	

Wadena nweship Name	Township Number   Ke	nge Nun	Section No.   Fr	Minness sctsun	ota Statutes 15	3. PROPERTY OWNER'S NA	· · · · · · · · · · · · · · · · · · ·	100141
istance and Direction from Road Intersections	or Street Address and Co	ty of Well Location	35	SE	111	Address Richal	rd Otteson	45 I
now exact location of well in section grid with	ug n			ush man			s. Minneso	
now exact meaning of weir in section grad with	Addition Nam	•   ;	Ske	etch map of w	en location.	4. WELL DEPTH (completed)	_	Date of Completion
		in					Reverse 7 Drives	Dug .
	Block Numbe	•	`-33-3	3-6			Air 8□ Bored	
'4 = C	Lot Number			,, ,	, (	6. USE	Itelled 9□Power	<del>""( 214-1)</del>
S			•		*	Domestic	4□ Public Supply	
FORMATION LOG		COLOR	HARDNESS OF	FROM	то	2□ Irrigation 3□ Test Well	5 ☐ Municipal 6 ☐ Air Condition	
				0	20	7. CASING	A	re/Belows
	micein bright married	manifest a strange of	Land Comment		constituente.	2 Gains 2 An 2 Weld	Orive Shoe?	Yes No 2
		A CAMPAGOS	10 A	20	4 4 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4	R. (Weight.	11 jts./ii.
ravel & Clay			1	47	57	in to	R: Weight	Be /t
100	Gr.		2	57	70	SCREEN DE LE	Carlos Carlos	gen hole
Devilor	STATE OF THE PARTY	70				stafale	es shel	Dia
			8	and I	7	Slot/Geuse	5	THE THINGS:
COMPLET	60 2	717		(D)	1995	59.5	ft. sod <b>53</b>	
	34-3	<u> 3-35</u>	BCD	DD	A	9. STATIC WATER LEVEL	ft and g	
	FIO	v. 12	92±			14	■ below □ above	Date Message 8-3-77
	211					10. PUMPING LEVEL (below to	and surface)	20
	A sate into a	A Salaran			المايات و درا	ft. after	Act. pom	
7 - CAR	14		35	10 A		Pitiess adapter	2□ Besement officet.	de John Street 13 above 5 grade
				C 7		12. Well grouted?	n □No v	
		LOCATED	BY	in in the same		The second of th		
		dress Ver	<del> </del>	1	7 2 2	Depths Brown	2☐ Bentoeite	
	2 D No	me on M		tion-of	A STATE OF THE STA	13. Nearest sources of possible of	ontamination.	
		t-Block				Well distracted upon com	pletion? Yes	The state of the s
		o. From	Dwner	ور الله	10 A	14. PUMP		
	6 - 🔲 Int	o. From	Neighbor					Date installed Not installed
		her n't Locat	o State I	Vhv	Activity	Manufactured & Mana		
		T Local	e State 1	··· <b>y</b>		Model Number	ari, and said	HP Votes
			97	v 14.		Type: - I Submanileta	3⊡ I. S. Turbine	Recipensating to S. C.
	ALT INC	-6 F	جرين يشودك			2□Jet J	4□Centrifugal -	
	Part Control				#13 400 100 100 100 100	16. WATER WELL CONTRACT	OR S CERTIFICATION	· The state of the
		· · · · · · · · · · · · · · · · · · ·				the best of my kn	owledge and belief.	
	Use a second sheet, if ne	eded.			1	-Diamend	Mater Mell	s, Inc. 19156
REMARKS, ELEVATION, SOURCE OF DA	TA. etc.					Address BOX	765, Braine	s, Inc. 18756 rd, Minn. 56101
						Signed A	Xom n	The state of the s
			٠			4.0	Authorized Represent	atre
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				Sary Je	Name of Driller	Deta

LOCATION OF WELL	STATI	OF MINNESOTA DEPARTMENT	MINNESOTA UNIQUE WELL NO.
Wadin		Minnesota Statutes	156A.01-0N
Township Name Township Nu	M - > E	Section No. Fraction	A PROPERTY OWNERS A FOR COTTER
Distance and Direction from Road Intersections or Street Ad	S W	2	Addresis
Not shape	Fire !	in Corner	11.2 5t 12.12
Show exact location of well in section grid with "X."		Sketch map of well location.	4. WELL DEPTH (completed)  Date of Completion
	Addition Name	- fire	51 6/25/56
		irun- 2115	5. 1 Cahle tool 4 Reverse 7 Driven 10 Dug
¥ E	lock Number		2 Hollow rod S Air & Bored 11
	9	tide.	Mutary 6□Jetted 9□Power Auger
	Lot Number		6. USE
S	- 1		ADDOMESTIC 4D Public Supply 7D Industry 2D Irrigation 5D Municipal 8D Commercial
2. FORMATION LOG	COLOR	HARDNESS OF FROM TO	3 Test Well 6 Air Conditioning 9□
	1	6 4	7. CASING HEIGHT: Above/Below HOLE DIAM  1□ Black 4□ Threaded
5 and	Struck	F-20 0 34	2 Galv. S Welded Surfaceft.
2	116	1 1 30 21	
6(4)	Du -	Jul 34 36	Plastic on Drive Shoet Yes No 7
T	9 ru v	Fre 36 51	in. toft. Weight lbs./ftin. to
	1		in. toft. Weightlbe./ftin. tof
	1		Make Act Las 3 ft. toft.
			Type Dia
			Stot/Gauze Length FITTINGS:
			Set between 417 ft. and 5 ft. Th. The Trinings:
			9. STATIC WATER LEVEL
			ti. □ befow □ above   Date Measured ( a / 2. 11/11
			10. PUMPING LEVEL (below land surface)
			ft. after hrs. pumping
	-7 1		ft. after hrs. pumping g.p.m.
			Pitless adapter, manufacturermodel
, , , , , , , , , , , , , , , , , ,			2 Basement offset At least 12" above grade 12 WELL OROUTED?
			1 Neat Cement 2 Bentonite 3 □
			Grout material from to to rt. Cu. Yds
			<del> </del>
			13. NEAREST SOURCES OF POSSIBLE CONTAMINATION
			leet direction Type
		1	Well disinfected upon completion? Yalk No□ + + + + +
			14. PUMP
		i	Date installed Not installed
			Date installedNot installed
			Model Number HP Volts
, and			Length of drop pipe ft. capacity
	1		Material of drop pipe
			Type: 1 Submersible 3 L. S. Turbine 5 Reciprocating
II	d sheet, if needed		2 det 4 Centrifugal 6
Use a secon  15. REMARKS, ELEVATION, SOURCE OF DATA, etc.	u anees, ii needed		16. WATER WELL CONTRACTOR'S CERTIFICATION  This well was drilled under my jurisdiction and this report is true to
			the best of my knowledge and belief.
•			Johnson Well Delling 81125
	757	EIVEL	Licensee Business Name
	KE	The second second	Address SP 4
	an and	18 1986	THATA
	302	THE PERSON NAMED IN	Signed Date Date
	E Commande	GYGI	// / / / Date
MINN. DE	PT. OF	100000	Name of Drittee 5,74 30M

## 226148

Bid Proposal for well on Test well Staples Industrial Park



AAmots test holes

Log of test hole by Asmot Well Drilling Co.

Driller Duane Kingsley - 10-21-70

O' - 28' Fine Sand ---- Water table approximately 3.0' POEND

28' - 35' Grey Clay

35! - 46! Gravel & Sand (possibly best aquifer)

46' - 58' Sandy Clay

58' - 156' Hard Pan

156' - 203' Clay Grey and Sandy

203' - 209' Shale & decomposed Granite

10 209' - 212' Granice

[3]-33=35=Acce8A Elev. 128125 214-4

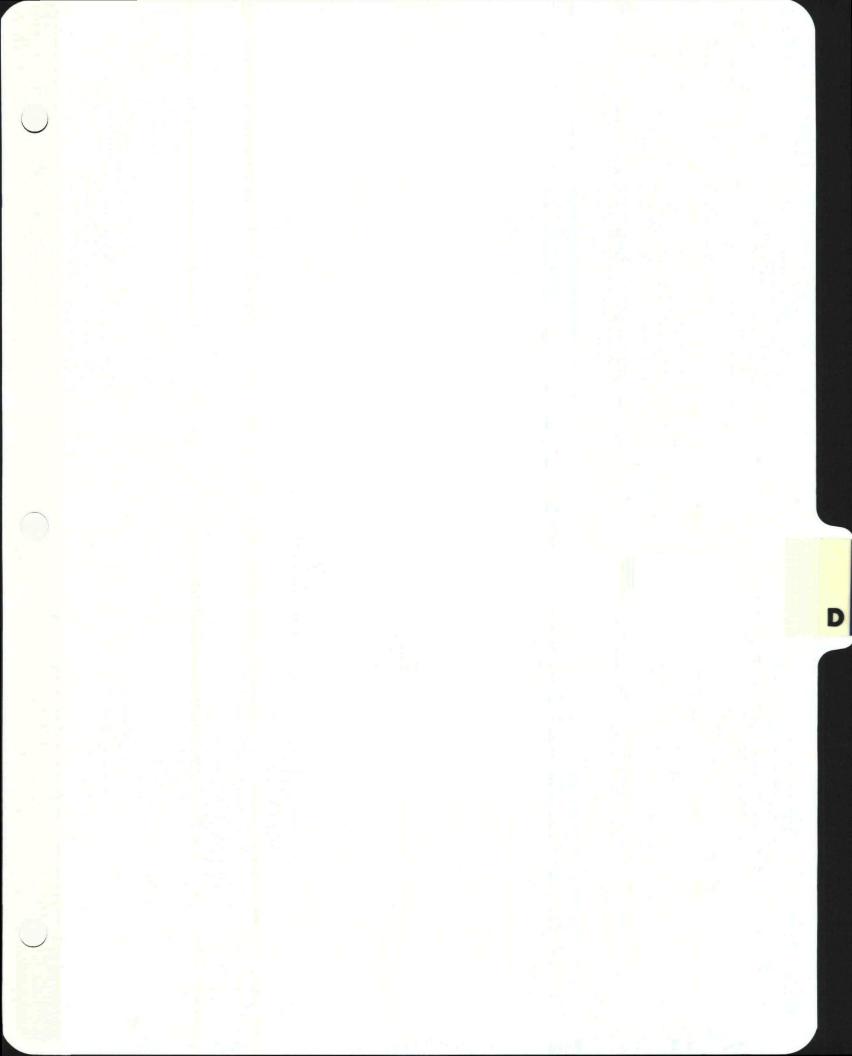
		TOE/	TED BY	34 36
1:	1. 1. E. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	コントーニー	373	~ 2
43		ame s	Veriticat Mailbox	ion
,J 3.		ni ne	Mailbox	
4		01,51001		
5	. [] P) []	at Bool	<b>Č</b>	-17
	1 1 1111		1.00	7 V (2.5.)
7 .	∐ Inf	o. Fron	n Owner Neighbo	
<i>''</i>	DL Oth	er au	, reignbo	or in
	🛛 Сал	1/1 1000	Neighbo	ووح
		Loca	te State	Why
	aday in the l			

Bellock enguntation Conzost Being - HRET oph fran HRET - PCCR

227 suple of 320. ant chy 6' L'ecouse gravel 250

### STAPLES WELL LOG

A:	amot We	ll Drilli	ing (	Co., Inc.	Toda	7 _
	Smithlas V		Set-			10.
	a is koka #S					
	d: <u>131-7</u>				ole "	,
Depth				Formation		dens
O' to	<u>. 125</u>				VVAC	20101
20	tr.					Co
35 to	40	ivol i sa	und	SA	Me A	15
46 to	عففنف	<u>idi clir</u>			100	
56 to 1.	<u> 50 , na.</u>	<u>rduan is</u>	<u></u>		108	
	<u>:::</u>					
203 to 20	<u> </u>	To to doc	<u>ಂಪುರ್ಧ</u>	od granilo		
20 <u>9</u> to	عيد دالم		<u> </u>	····		
to		· ·			<del></del>	
to		· · · · · · · · · · · · · · · · · · ·				
	SIZES A	AND MATERI	ALS US	ED		· · · · · · · · · · · · · · · · · · ·
Top Casing Lin	e: Inside Diamete	r	ir	. Wt. per ft	lbs.	
De	pth	ft		in.		
Any Reduced (	Casing Sizes	·	· · · · · · · · · · · · · · · · · · ·			
Total Dooth to	bottom of Casing				in.	a de la companya de la companya La desagna de la companya de la comp La decagna de la companya d
	bottom of Well					
	d from:	·				
	Size of Screen: D	and the second second	• • •			
	of Screen	•			and the second of the	
	ngs	•	* -			
	n Borehole				w casing	
Test data:	(gpm)			mped for	hrs.	
	(gph)			- The state of the		
Test Pump:	· · · · · · · · · · · · · · · · · · ·	<u> </u>	<del> </del>	m mykadésika di di Tanggalan		
Tot. Len. of Set	Hing:					
NOTES:			_ ··	LOCATED BY		
<b></b>	<u> </u>			Address Verifica		
		. [		Name on Mailbe	xc	
				Lot-Block		•
		<i>'</i>		Plat Book Info. From Own	or	
				Into. From Own Info. From Neig		
•		†		Other		
	•	Ì	. :	Cap't Locate St	ate Why	



Site STERN RUBBER & TOOLCO.

EPA # MND045973419

Date 1017-91 .

Time 1300 a.m. p.m.

Direction EAST

Weather PARTY CLOUDY, 1 40°F

Photographed by: STAGER

Sample ID # SP-1

Description SAMPLE TAKEN

FROM ON-SITE, SANDPOINT

WELL #1, ANALYZED BY

MN DEPT. OF HEALTH.



Site STERN RUBBER & TOOL CO.

EPA # MND 045 973 419

Date 10-17-91

Time 1330 a.m. p.m.

Direction GAST

Weather PARTLY CLOUDY,

400 F

Photographed by: S.A.-MEBER

Sample ID# SP-2

Description SAMPLE TAKEN

FROM ON-SITE, SANDPOINT

WELL #2, ANALYZED BY

MN. DEPT. OF HEALTH.



Site STERN RUBBER AND TOOL CO.

EPA # mnd 045 973 419

Date 8-8-92

Time 1430 a.m. p.m.

Direction

Weather

Photographed by: S.A.-MEGER

Sample ID #

Description SAS WATER SAMPLES

PACKED AND READY FOR SHIPMENT.



Site STEAN RUBBER & TOOL CO.

EPA # MNO.045973419

Date 10117191

Time 1135 a.m. p.m.

Direction South

Weather PARTLY CLOUDY; 1140°F

Photographed by: SFAGER

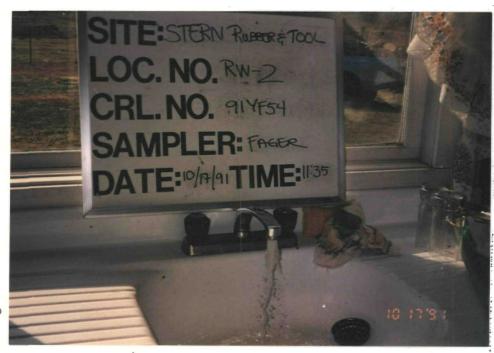
Sample ID# RW-Z;

Description SAMPLE TOLEN

FROM KITCHEN FAUCET, MAINZED

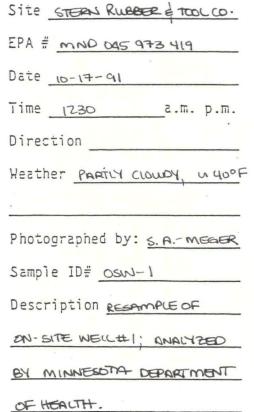
FOR COLIFORM BACTERIA AND

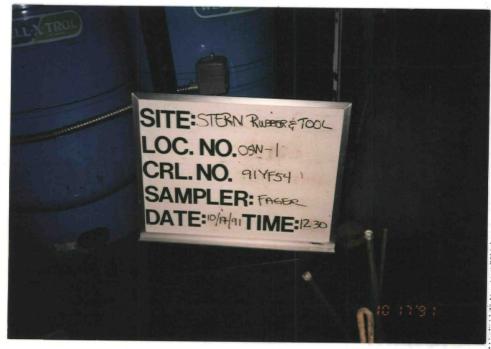
NITRATES+ NITRITES.



Site STERN RUBBER & TOOL CO.
EPA # mno 045 973 419
Date
Time 1200 a.m. p.m.
Direction NORTH
Weather PARTY CLOUDY, 1 400F
Photographed by: STAGER
Sample ID # RW-Z
Description SAMPLE TAKEN
FROM OUTDOOR FAULET; ANALYZED
FOR VOC'S, THROUGH MINNESOTA
OF RESIDENTIAL WELL# Z.

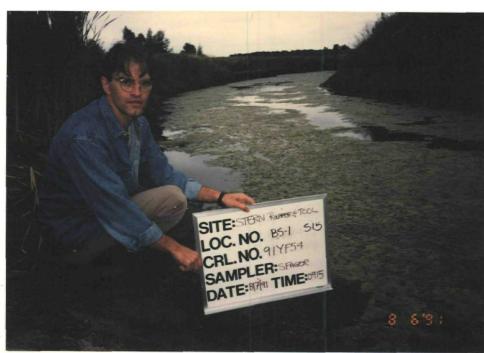






Site STERN RUBE	DER & TO	DOL (0.				
EPA # MNO 045 97	13419					
Date 8-7-91						
Time 0915	_a.m.	p.m.				
Direction South	NEST					
	Weather OVERCAST; N 50° F					
Photographed by:	SFACE	R				
Sample ID # SIC	2 22					
Description cos	E-UP,					
BACKGROUND SE	DIMENT					

SAMPLE SIS.



Site STEAN RUBBER & TOOL CO.

EPA # MND OUS 973419

Date 8-7-91

Time 0915 a.m. p.m.

Direction SOUTHWEST

Weather COERCAST,

W90°F

Photographed by: SFACER

Sample ID# 815

Description PERSPECTIVE,

BACKGROUND SEDIMENT SAMPLE

SIG.



Site STERN RUBBER & TOOL CO.

EPA # MND OUS 973419

Date 8-7-91

Time 1030 a.m. p.m.

Direction

Weather OVERCAST, V 50°F

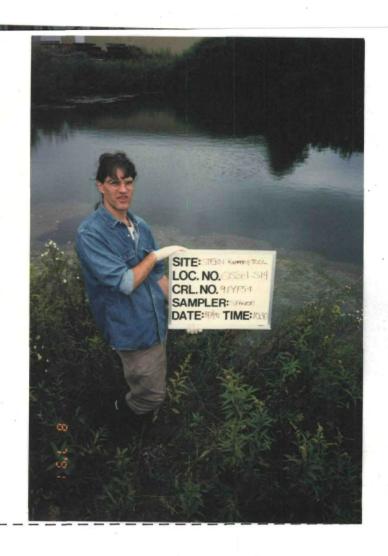
Photographed by: STALER

Sample ID # SI4

Description CLOSE-UP OF

ON-SITE SEDIMENT SAMPLE

S12, FROM DISCHARGE POND.



Site STERN RUBBER & TOOLCO.

EPA # MND OUS 973419

Date 8-7-91

Time 1030 a.m. p.m.

Direction NORTHEAST

Weather OUERCAST, WEDOF

Photographed by: STACER

Sample ID# SIH

Description RESPECTIVE, ON
SITE SEDIMENT SAMPLE SIH,

FROM DISCHARGE POND.



Site STERN RUBBER & TOOL CO.

EPA # MND 045 973 419

Date 8-7-91

Time 1015 a.m. p.m.

Direction NORTH EAST

Weather OUBRURST: N50°F

Photographed by: STAGER

Sample ID # SIO

Description PERSPECTIVE, SAMPLE

10 TALLEN FROM ON-SITE COOLING

WATER DISCHARGE POND.



Site STEAN RUBBER FTOOL CO.

EPA # MNDOAS 973419

Date 8.7-91

Time 1025 a.m. p.m.

Direction NORTHEAST

Weather OVERLOST; USDOF

Photographed by: STACKER

Sample ID# SII

Description CLOSE: UP, SAMPLE

SIO TAKEN FROM PIPE THAT

DISCHARGES COOLING WATER



Site STERN RUBBER TOOLCO.

EPA # MND 045 973419

Date 8-7-91

Time 1025 a.m. p.m.

Direction NORTHEAST

Weather OVERCAST; N 50°F

Photographed by: STAGEL

Sample ID # SII

Description PERSTECTIVE, SAMPLE

II TAKEN FROM COUNE WINTER

PISCHARGE PIPE TO ON-SITE

POND.



Site SPEAN RUBBER & TOOL CO.

EPA # MND OUS 973419

Date 8-7-91

Time 1115 a.m. p.m.

Direction

Weather Overcast, USOF

Photographed by: STAGGEL

Sample ID# SIZ

Description CLOSE-UP SAMPLE

12, TAKEN FROM ON-SITE,

DEEP WELL.



Site STERN RUBBER & TOOL CO.

EPA # MNO 045 973 419

Date 8-6-91

Time 2015 a.m. p.m.

Direction SOUTHWEST

Weather N 50° F OVER
CAST

Photographed by: S.A.-MEGER

Sample ID # SO9

Description PERSPECTIVE, SAMPLE

SO9, STAPLES AIRPORT, MONITORING

WELL #1.



Site STEPN RUBBER \$1001.CO.

EPA # MNO 045973419

Date 8-7-91

Time 0930 a.m. p.m.

Direction WEST

Weather OVERCAST; USDOF

Photographed by: SFACER

Sample ID# NONE

Description PRAIRLE AVE, SAMPLE

SOF TAILEN FROM SMALL BUILDING

IN FRONT OF PARN.



NOTE! STERN RUBBER & TOOL IS NOW!

AMERICAN RUBBER PRODUCTS CORP.

Site STERN RUBBER of TOOL CO.

EPA # MND 045 973 419

Date 8-7-91

Time 0930 a.m. p.m.

Direction South

Weather Overcast; v 50°F

Photographed by: S.FAGER

Sample ID # NONE TAKEN

Description FRONT OF STEEN

RUSSER + DOL BULLDING.



Site STERN RUBBER & TOOLCO.

EPA # MND OUS 973 419

Date 8-7-91

Time 1015 a.m. p.m.

Direction NDRTHEAST

Weather OURCAST, USDOF

Photographed by: SFACEE

Sample ID# SID

Description SAMPLE FROM

ON-SITE LOOUNG WATER

DISCHARGE POND. (LOSE-UP)



Site STERN RUBBER &	root co.	_			
EPA # MND 045 97341	9	-			
Date 8-6-91		_			
Time 1725	a.m. p.m.				
Direction NORTHEAST		_			
Weather Sunny, U 60°F					
		_			
Photographed by: <u>s.</u>	A. MEGER	_			
Sample ID # sot					
Description Peaseco	IVE, SAMPL	E			
SOF, RESIDENTIAL WEL	L#7;	_			

WELL HOUSE



Site STERN RUBBER & TOOL CO.

EPA # MNOOUS 973419

Date 8-6-91

Time 2010 a.m. p.m.

Direction SOUTHWEST

Weather v 50°F, CLOUDY

Photographed by: S.A.-MEGER

Sample ID# DOD

Description BALLER BUNK, STAPLES

AIRPORT MONITORING WELL# 1



Site STEEN RUBBER & TOOL CO.

EPA # MND 045 973419

Date 8-6-91

Time 2010 a.m. p.m.

Direction SOUTHWEST

Weather W 50°F,

OUERCAST

Photographed by: S. R.-MEGER

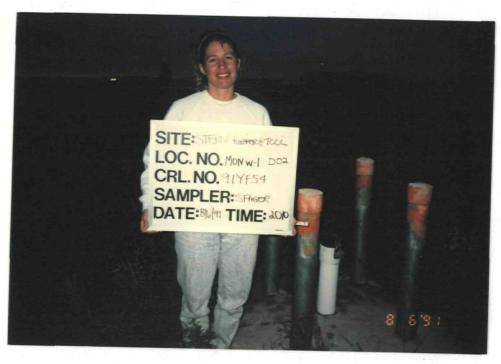
Sample ID # DO2

Description PERSPECTIVE,

BALLER BLANK, STAPLES AIRPORT

MONITORING WELL#1. CAR IN

BACKGROUND ON PEARLE RUE.



Site STEEN RUBBER & TOOL CO.

EPA # MNDOUS 9773419

Date 8-6-91

Time 2015 2.T. p.T.

Direction SOUTH WEST

Weather N50°F, OUER
(AST

Photographed by: S.A.-MEEER

Sample ID# SOQ

Description SAMPLE FROM

STAPLES ALRADRI, MONITORING

WELL#1, CLOSE-UP



Site STEEN RURBER & TOOL CO.

EPA # MND 045 973 419

Date 8-6-91

Time 1690 a.m. p.m.

Direction south

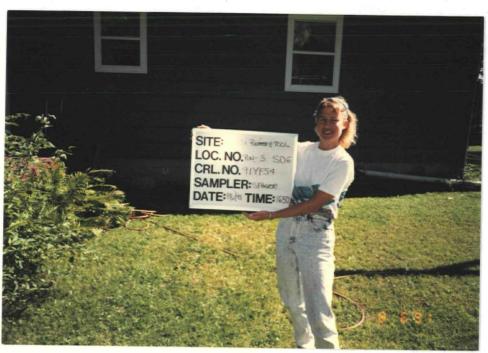
Weather sunny, 1160°F

Photographed by: S. A. MESER

Sample ID # SOLO ...

Description PERSPECTIVE,

SAMPLE SOLO, RESIDENTIAL



### Site STERN RUBBER & TOOL CO.

EPA # MND 045973419

Date 8-6-91

Time 1725 a.m. p.m.

Direction NORTH

Heather sunny 11600 F

Photographed by: SFAGER

Sample ID# 507

Description CLOSE-UP, SAMPLE

SOT, RESIDENTIAL WELL#7



Site STERN RUBBER & TOOL CO.

EPA # MND 045 973419

Date 8-6-91

Time 1515 a.m. p.m.

Direction EAST

Weather SUNNY, 1160°F

Photographed by: S. A. MEGER

Sample ID # 505 \*\*\*

Description PERSPECTIVE; SAMPLE

SOS RESIDENTIAL WELLTHY

NOTE: TIME OF SAMPLE SHOULD



Site STEEN RUBBER & TOOL CO.

EPA # MNOOUS973419

Date 8-6-91

Time 1650 a.m. p.m.

Direction South

Weather Swiny, 060° F

Photographed by: S.A.-MEGER

Sample ID# Solo

Description close-up sample

Solo, RESIDENTIAL WELL#5

BE 1515



Site STERN RUBBER & TOOL CO.

EPA # MND 045973419

Date 8-6-91

Time 1145 a.m. p.m.

Direction NORTHERS

Weather SUNNY, WGOOF

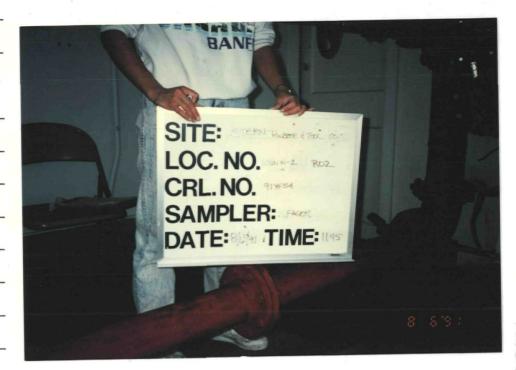
Photographed by: SAMESER

Sample ID # RO2

Description close-up

FIELD BLANK, STEWART VILLE

MUNICIPAL WELL #2



Site STERN RUBBER & TOOL CO.

EPA # MND 045 973419

Date 8-6-91

Time 1200 a.m. p.m.

Direction NORTHEAST

Heather sunny, v60°F

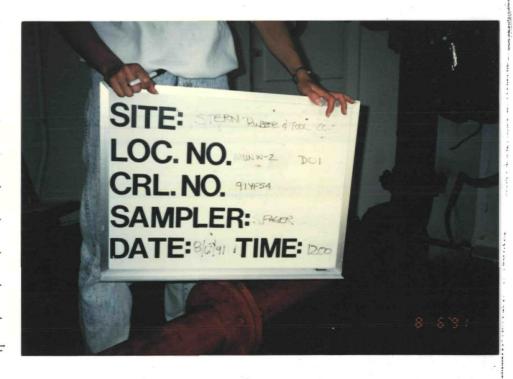
Photographed by: S. A-MEGER

Sample ID# <u>DOI</u>

Description close up

DUPLICATE SAMPLE SOI,

STAPLES MUNICIPAL WELL #2



Site STERN RUBBER & TOOL CO.

EPA # MND 045 973 419

Date 8-6-91

Time 1200 a.m. p.m.

Direction NORTH

Weather SUNNY, "60° F

Photographed by: 5. A-MERGER

Sample ID # pol ==

Description PERSPECTIVE,

DUPLICATE OF SOI, STEWART-

VILLE MUNICIPAL WELLHOUSE.



Site STORN RUPBER & TOOL CO.

EPA # MND045 973419

Date 8-6-91

Time 1210 a.m. p.m.

Direction NORTHEAST

Heather SWINY 560°F

Photographed by: S. A-MESER

Sample ID# SOI

Description CLOSE-UP, SAMPLE

SOI, STAPLES MUNICIPAL WELL#2.



Site STERN RUSSER \$ TOOL CO.						
EPA # MND 045973419						
Date 8-6-91						
Time 1615 a.m. p.m.						
Direction NORTHEAST						
Weather sunny 1 600 F						
Photographed by: SFAGER						
Sample ID # 803						
Description Programue compe						

SO3, RESIDENTIAL WELL # Z



Site STERN RUBBER & TOOLCO.

EPA # MND.DAS 973419

Date 8-6-91

Time 1445 a.m. p.m.

Direction EAST

Weather SWINY, 160° F

Photographed by: SFAGER

Sample ID# SOA

Description CLOSE-UP, SAMPLE

SOA, RESIDENTIAL WELL#3



Site STEEN RUBBER & TOOL CO.

EPA # MND045973419

Date 8-6-91

Time 1445 a.m. p.m.

Direction EAST

Weather SUNNY, N 60° F

Photographed by: STAGER

Sample ID # SOA

Description PERSPECTIVE, SAMPLE

SOY, RESIDENTIAL WELL #3



Site STERN RUBBER & TOOL CO.

EPA # MNDOAS 973419

Date 8-6-91

Time 1515 a.m. p.m.

Direction EAST

Weather SUNNY, V60°F

Photographed by: S.A.-MEGER

Sample ID# SUS

Description CLOSE-UP, SAMPLE

SOG, RESIDENTIAL WELL# 4

NOTE: TIME OF SAMPLE

SHOULD BE 1515.



Site STERN RUBBER & TOOLCO.

EPA # MND 045 973419

Date 8-6-91

Time 1365 a.m. p.m.

Direction WEST

Weather SUNNY, V60°F

Photographed by: S.FAGER

Sample ID # 602

Description PERSPECTIVE,

SAMPLE SOZ, RESIDENTIAL WELL

#1



Site STERN RUBBER & TOOL CO.

EPA # MND.045 973 419

Date 8-6-92

Time 1615 a.m. p.m.

Direction NORTH

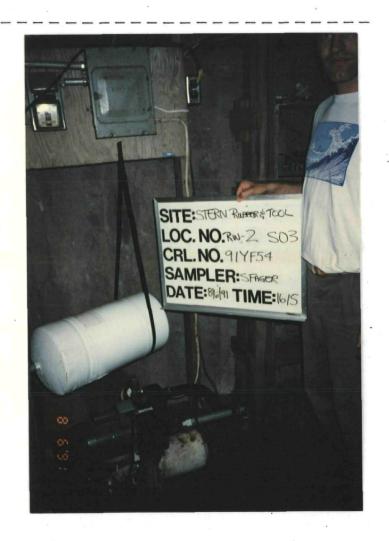
Weather SUNNY, V60° F

Photographed by: S.FAGER

Sample ID# 503

Description CLOSE UP, SIMPLE

SO3. FROM RESIDENTIAL WELL #2.



Site <u>s</u>	TERN RUBBER	\$ TOOL	CD.	
EPA #	MND 04597	3419		
Date _	8-6-91			
Time _	1210	_a.m.	p.m.	
Direct	ion NORTH			
Weather SWNY, NGO°F				

Photographed by: S. ANDERSON-MEGER

Sample ID # SOI \*\*

Description PERSPECTIVE; SAMPLE

SOI, STAPLES MUNICIPAL WELL#2,

MUNICIPAL WELLHOUSE



Site STERN RUBBER & TOOL CO.

EPA # MNO 045973419

Date 8-6-91

Time 1355 a.m. p.m.

Direction WEST

Weather SUNNY, 5 60° F

Photographed by: S.FAGER

Sample ID# SOZ

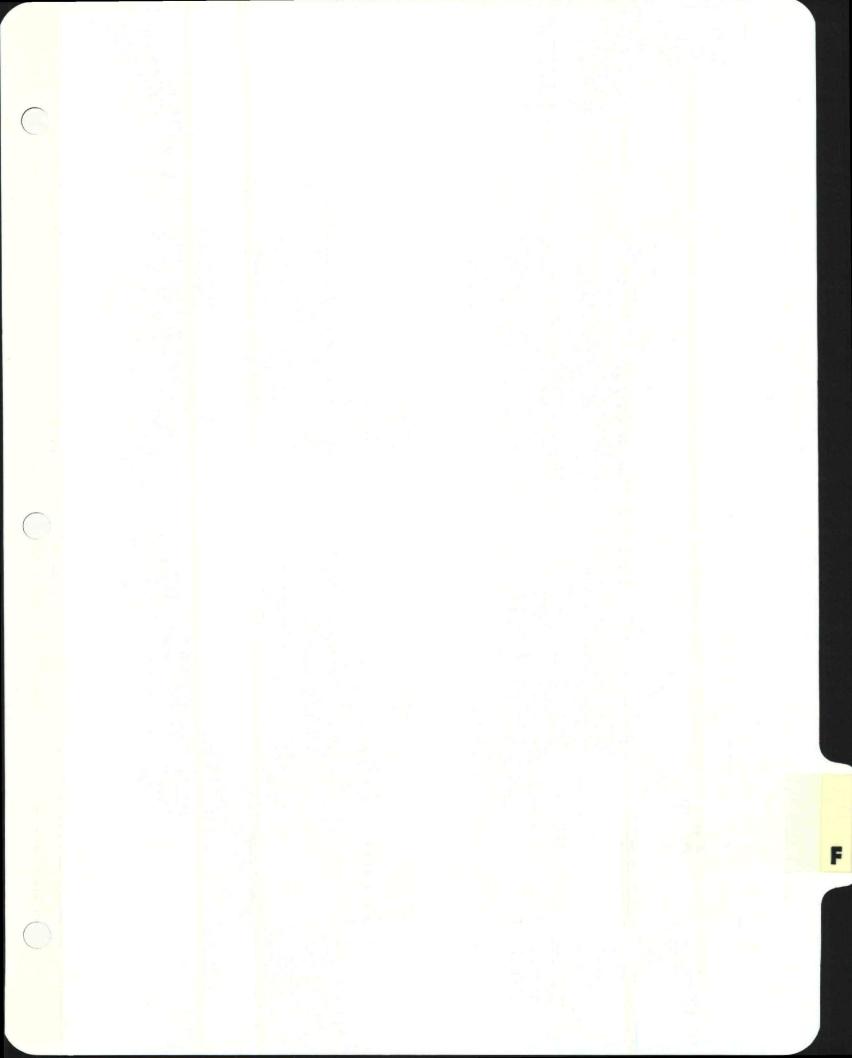
Description CLOSEUP RESIDENTIAL

WELL#1; SAMPLE SOZ



# - MONITORI WELL SAMPLING/STABILIZATION Ft - MPCA Site Assessment Unit

Site Inspection: Stern Rubber & Tool	
Date: 8-6-91 Time: 18:15 Weather: Cbudy, 70°5 6verz	૧
Field staff: Skulen Anderson-Mager, Sue Fager	
Well name/location: MW-1 Southwest of Airport	
Contact name/phone: Ron Selvy - City of Stopes (218)894-25.	50
Well condition: locked? yes no damage? yes no key #: 443 casing material:	
Vapor reading at well mouth: initialppm finalppm	
Well casing diameter:in Casing stick-up:ft	
(A) well depth from t.o.c.: <u>20</u> . <u>80</u> ft	
(B) depth to water from t.o.c: $6.77$ ft A - B = $4.11$ ft	
(C) 0.163 gal/ft for 2" well; 0.653 gal/ft for 4" well	
Saturated casing volume: $9.20$ gals = $[(A - B) \times C]$	
Purge method: bailand-teblon Vapor reading of purge water: ppm	
Pump rate or method to measure purge volume: 4 gallan bucket	
Well         Time         Temperature         Conductance         pH         Water         Purge           volume         (degree C)         (umhos/cm)         (unit)         depth         volume           #         +/- 0.5         +/- 5% of range         +/- 0.1         (ft)         (gal)	
1 1910 ? 316 7.55 - 9	
2 1930 11.0 309 7.55 - 18	
3 1955 11.5 315 7.75 - 27	
4	
5	
Start time: Stop time: Duration:	
Total gallons purged: 2) gals Total well volumes purged: 3	
Purge water color/turbidity/odor: Clack, no adors	
Sampling method: Filtered? yes no	
Sample#s/Type: VOAS 509 50/2 MON W-	
Sample#s/Type: VOAS 509 spike MON W-1  Comments:  Roy bailer blank	
Roy boiler blank	



### TARGET COMPOUND LIST (TCL)

TARGET ANALYTE LIST (TAL)

AND

CONTRACT REQUIRED

QUANTITAION LIMITS (CRQL)

# Special Analytical Services (SAS) TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

Quantitation I	_im	its
----------------	-----	-----

•		daguereserou primites
	ara v. h	Water
Volatiles	CAS Number	μg/L
	7/ 07 7	,
l. Chloromethane	74-87-3	1
2. Bromomethane	74-83-9	1
<ol><li>Vinyl Chloride</li></ol>	75-01-4	1
4. Chloroethane	75-00-3	. 1
<ol> <li>Methylene Chloride</li> </ol>	75-09-2	2
6. Acetone	67-64-1	5
7. Carbon Disulfide	75-15-0	1
8. 1,1-Dichloroethene	75-35-4	ĺ
	75-34-3	1
9. 1,1-Dichloroethane	156-59-4	i
10. cis-1,2-Dichloroethene	130-33-4	ı
ll. trans-1,2-Dichloroethene	156-60-5	1
12. Chloroform	67-66-3	1
13. 1,2-Dichloroethane	107-06-2	l
14. 2-Butanone	78-93-3	5
15. Bromochloromethane	74-97-5	1
16. 1,1,1-Trichloroethane	71-55-6	1
17. Carbon Terrachloride	56-23-5	1
18. Bromodichloromethane	75-27-4	1
		1
19. 1,2-Dichloropropane	78-87-5	ı
20. cis-1,3-Dichloropropene	10061-01-5	1
21. Trichloroethene	79-01-6	1
22. Dibromochloromethane	124-48-1	1
23. 1,1,2-Trichloroethane	79-00-5	1
24. Benzene	71-43-2	1
25. trans-1,3-Dichloropropene	10061-02-6	1
26. Bromoform	75-25-2	ī
27. 4-Methyl-2-pentanone	108-10-1	5
28. 2-Hexanone	591-78-6	. 5
29. Tetrachloroethene	127-18-4	1
	~-·	

		Quantitation Limits
Volatiles	CAS Number	<u>Water</u> μg/L
30. 1,1,2,2-Tetrachloroethane	79-34-5	1
31. 1,2-Dibromoechane	106-93-4	1
32. Toluene	108-88-3	1
33. Chlorobenzene	108-90-7	1
34. Ethylbenzene	100-41-4	L.
35. Styrene	100-42-5	1
36. Xylenes (total)	1330-20-7	1
37. 1,3-Dichlorobenzene	541-73-1	1
38. 1,4-Dichlorobenzene	106-46-7	1
39. l,2-Dichlorobenzene	95-50-1	1
40. 1,2-Dibromo-3-chloropropane	96-12-8	1

			Quantitation Limits
			Water
	Semivolatiles	CAS Number	μg/L
1	D. 1	100 05 2	e
	Phenol	108-95-2	5
	bis-(2-Chloroethyl)ether	111-44-4	5
	2-Chlorophenol	95-57-8	5 .
4.	2-Methylphenol	95-48-7	5
5.	2,2'-oxybis(1-Chloropropane)	108-60-1	. 5
6.	4-Methylphenol	106-44-5	5
7.	N-Nitroso-di-n-propylamine	621-64-7	5
8.	Hexachloroethane	67-72-1	. 5
9.	Nitrobenzene	98-95-3	5
10.	Isophorone	78-59-1	5
	2-Nitrophenol	88-75-5	5
	2,4-Dimethylphenol	105-67-9	5
	bis-(2-Chloroethoxy)methane	11-91-1	5
14	2,4-Dichlorophenol	120-83-2	5
	1,2,4-Trichlorobenzene	120 -82 - 1	5
	Naphthalene	91-20-3	5
	4-Chloroaniline	106-47-8	5 .
	Hexachlorobutadiene	87-68-3	5
10	(Chlore 3 methylphone)	59-50-7	5
	4-Chloro-3-methylphenol 2-Methylnaphthalene	91-57-6	. 5
		77-47-4	5
	Hexachlorocyclopentadiene		5
	2,4,6-Trichlorophenol	88-06-2	
23.	2,4,5-Trichlorophenol	95-95-4	20
24.	2-Chloronaphthalene	91-58-7	5
25.	2-Nitroaniline	88-74-4	20
26.	Dimethylphthalate	131-11-3	5
27.	Acenaphthylene	208-96-8	5 .
28.	2,6-Dinitrotoluene	606-20-2	5
29.	3-Nitroaniline	99-09-2	20
30.	Acenaphthene	83-32-9	. 5
31.	2,4-Dinitrophenol	51-28-5	20
32.	4-Nitrophenol	100-02-7	20
33.	Dibenzofuran	132-64-9	5
٠,٠		132 37 3	

:		Quantitation Limits
		Water
Semivolatiles	CAS Number	μg/L
34. 2,4-Dinitrotoluene	121-14-2	5
<ol> <li>Diethylphthalate</li> </ol>	84-66-2	5
36. 4-Chlorophenyl-phenylether	7005 - 72 - 3	5
37. Fluorene	86-73-7	5
38. 4-Nitroaniline	100-01-6	20
39. 4,6-Dinitro-2-methylphenol	534-52-1	20
40. N-Nitrosodiphenylamine	86-30-6	. 5
41. 4-Bromophenyl-phenylether	101-55-3	5
42. Hexachlorobenzene	118-74-1	5
43. Pentachlorophenol	87-86-5	20
44. Phenanthrene	85-01-8	5
45. Anthracene	120-12-7	5
46. Di-n-bucylphchalate	84-74-2	. 5
47. Fluoranthene	206-44-0	5
48. Pyrene	129-00-0	5
49. Butylbenzylphthalate	85-68-7	. 5
50. 3,3'-Dichlorobenzidine	91-94-1	5
51. Benzo(a)anthracene	56-55-3	5
52. Chrysene	218-01-9	5
53. bis-(2-Ethylhexyl)phthalate	117-81-7	5
S4. Di-n-octylphthalate	117-84-0	5
55. Benzo(b) fluoranthene	205-99-2	5
56. Benzo(k)fluoranthene	207-08-9	5
57. Benzo(a)pyrene	50-32-8	. 5
58. Indeno(1,2,3-cd)pyrene	193-39-5	5
50 80 (1)		
59. Dibenz(a,h)anthracene	53-70-3	5
60. Benzo(g,h,i)perylene	191-24-2	5

		Quantitation Limits
•		Water
Pesticides/PCBs	CAS Number	μg/L
		<del></del>
1. alpha-BHC	319-84-6	0.01
2. beta-BHC	319-85-7	0.01
3. delta-BHC	319-36-8	0.01
4. gamma-BHC (Lindane)	58-89 <b>-</b> 9	0.01
5. Heptachlor	76-44-8	0.01
6. Aldrin	309-00-2	0.01
7. Heptachlor epoxide	1024-57-3	0.01
8. Endosulfan I	959-98-8	0.01
9. Dieldrin	60-57-1	0.02
10. 4.4'-DDE	72-55-9	0.02
10. 4,4 -002	, <u>72-33-</u> 3	0.02
11. Endrin	72 - 20 - 8	0.02
12. Endosulfan II	33213-65-9	0.02
13. 4,4'-DDD	72 - 54 - 8	0.02
14. Endosulfan sulfate	1031-07-8	0.02
15. 4,4'-DDT	50-29-3	0.02
	70 (2.5	0.10
16. Methoxychlor	72-43-5	0.10
17. Endrin ketone	53494-70-5	0.02
18. Endrin aldehyde	7421-36-3	0.02
19. alpha-Chlordane	5103-71-9	0.01
20 gamma-Chlordane	5103 - 74 - 2	0.01
21. Toxaphene	8001 - 35 - 2	1.0
22. Aroclor-1016	12674-11-2	0.20
23. Aroclor-1221	11104-28-2	0.20
24. Aroclor-1232	11141-16-5	0.40
25. Aroclor-1242	53469-21-9	0.20
26. Aroclor-1248	12672-29-6	0.20
27. Aroclor-1254	11097-69-1	0.20
28. Aroclor-1260	11096-82-5	0.20

### Routine Analytical Services (RAS) TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

			Quantitation Limits*			
			Low Med.			On
			<u>Water</u>	Soil	<u>Soil</u>	<u>Column</u>
	Volatiles	CAS Number	ug/L	ug/Kg	ug/Kg	(ng)
		<b>5</b>	• •		1000	4500
	Chloromethane	74-87-3	10	10	1200	(50)
	Bromomethane	74-83-9	10	10	1200	(50)
	Vinyl Chloride	75-01-4	10	10	1200	(50)
	Chlorcethane	75-00-3	10	10	1200	(50)
5.	Methylene Chloride	75-09-2	10	10	1200	(50)
6	Acetone	67-64-1	10	10	1200	(50)
	Carbon Disulfide	75-15-0	10	10	1200	(50)
	1,1-Dichloroethene	75-35-4	10	10	1200	(50)
	1,1-Dichloroethane	75-34-3	10	10	1200	(50)
	1,2-Dichloroethene (total)		10	10	1200	(50)
10.	1,2-Dichiordethene (total)	340-39-0	10		1200	(30)
11.	Chloroform	67-66-3	10	10 -	1200	(50)
12.	1,2-Dichloroethane	107-06-2	10	10	1200	(50)
	2-Butanone	78-93-3	10	10	1200	(50)
	1,1,1-Trichloroethane	71-55-6	10	10	1200	(50)
	Carbon Tetrachloride	56-23-5	10	10	1200	(50)
		30 23 3		10	1200	(30)
16.	Bromodichloromethane	75-27-4	10	10	1200	(50)
17.	1,2-Dichloropropane	78-87-5	10	10	1200	(50)
	cis-1,3-Dichloropropene	10061-01-5	10	10	1200	(50)
	Trichloroethene	79-01-6	10	10	1200	(50)
	Dibromochloromethane	124-48-1	10	10	1200	(50)
		. 224 40 2	-0		1200	(30)
21.	1,1,2-Trichloroethane	79-00-5	10	10	1200	(50)
	Benzene	71-43-2	10	10	1200	(50)
23.	trans-1,3-Dichloropropene	10061-02-6	10	10	1200	(50)
24.	Bromoform	75-25-2	10	10	1200	(50)
25.	4-Methyl-2-pentanone	108-10-1	10	10	1200	(50)
26	2-Hexanone	E01 70 (	10	10	1000	(50)
		591-78-6	10	10	1200	(50)
	Tetrachloroethene	127-18-4	10	10	1200	(50)
	Toluene	108-88-3	10	10	1200	(50)
29.	1,1,2,2-Tetrachloroethane	79-34-5	10	10	1200	(50)
30.	Chlorobenzene	108-90-7	10	10	1200	(50)
31.	Ethyl Benzene	100-41-4	10	10	1200	(50)
32.	Styrene	100-42-5	10	10	1200	(50)
	Xylenes (Total)	1330-20-7	10	10	1200	(50)
٠.	MITCHES (INCAL)	1330-20-7	10	10	1200	(50)

<sup>\*</sup> Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

		Quantitation Limits*			
			Low	Med.	On
•		Water	<u>Soil</u>	<u>Soil</u>	Column
Semivolatiles	CAS Number	ug/L	ug/Kg	ug/Kg	(ng)
34. Phenol	108-95-2	10	330	10000	(20)
35. bis(2-Chloroethyl) ether	111-44-4	10	330	10000	(20)
36. 2-Chlorophenol	95-57-8	10	330	10000	(20)
37. 1,3-Dichlorobenzene	541-73-1	10	330	10000	(20)
38. 1,4-Dichlorobenzene	106-46-7	10	330	10000	(20)
39. 1,2-Dichlorobenzene	95-50-1	10	330	10000	(20)
40. 2-Methylphenol	95-48-7	10	330	10000	(20)
41. 2,2'-oxybis					
(1-Chloropropane)#	108-60-1	10	330	10000	(20)
42. 4-Methylphenol	106-44-5	10	330	10000	(20)
43. N-Nitroso-di-n-					, ,
propylamine	621-64-7	10	330	10000	(20)
44: Hexachloroethane	67-72-1	10	330	10000	(20)
45. Nitrobenzene	98-95-3	10	330	10000	(20)
	78-59-1	10	330	10000	(20)
46. Isophorone	88-75-S	10	330	10000	(20)
47. 2-Nitrophenol	105-67-9	10	330	10000	(20)
48. 2,4-Dimethylphenol	103-67-9		330	10000	(20)
49. bis(2-Chloroethoxy)					
methane	111-91-1	10	330	10000	(20)
50 2,4-Dichlorophenol	120-83-2	10	330	10000	(20)
51. 1,2,4-Trichlorobenzene	120-82-1	10	330	10000	(20)
52. Naphthalene	91-20-3	10	330	10000	(20)
53. 4-Chloroaniline	106-47-8	10	330	. 10000	(20)
54. Hexachlorobutadiene	87-68-3	10	330	10000	(20)
55. 4-Chloro-3-methylphenol	59-50-7	10	330	10000	(20)
56. 2-Nethylnaphthalene	91-57-6	10	330	10000	(20)
57. Hexachlorocyclopentadiene		10	330	10000	(20)
58. 2,4,6-Trichlorophenol	88-06-2	10	330	10000	(20)
50. 2, =, 0 · II I child to phenor	30-00-2	10	230	10000	(23)
59. 2,4,5-Trichlorophenol	95-95-4	25	800	25000	(50)
60. 2-Chloronaphthalene	91-58-7	10	330	10000	(20)
61. 2-Nitroaniline	88-74-4	25	800	25000	(50) 1
62. Dimethylphthalate	131-11-3	10	330	10000	(20)
63. Acenaphthylene	208-96-8	10	330	10000	(20)
64. 2,6-Dinitrotoluene	606-20-2	10	330	10000	(20)
65. 3-Nitroaniline	99-09-2	25	800	25000	(50)
66. Acenaphthene	83-32-9	10	330	10000	(20)
67. 2,4-Dinitrophenol	51-28-5	25	800	25000	(50)
•	100-02-7	25	800	25000	(50)
68. 4-Nicrophenol	100-02-7	د ے	300	23000	(50)

<sup>=</sup> Previously known by the name bis(2-Chloroisopropyl) ether

(continued)		Quantitation Limits*				
			Low	Med.	On	
		Water	<u>Soil</u>	<u>Soil</u>	Column	
<u>Semivolatiles</u>	CAS Number	ug/L	ug/Kg	ug/Kg	(ng)	
69. Dibenzofuran	132-64-9	10	330	10000	(20)	
70. 2,4-Dinitrotoluene	121-14-2	10	330	10000	(20)	
71. Diethylphthalate	84-66-2	10	330	10000	(20)	
72. 4-Chlorophenyl-phenyl						
ether	7005-72-3	10	330	10000	(20)	
73. Flysmane	86-73-7	10	330	10000	(20)	
	•					
74. 4-Nitroaniline	100-01-6	25	800	25000	(50)	
75. 4,6-Dinitro-2-methylphenol	534-52-1	25	800	25000	(50)	
76. N-nitrosodiphenylamine	86-30-6	10	330	10000	(20)	
77. 4-Bromophenyl-phenylether	101-55-3	10	330	10000	(20)	
78. Hexachlorobenzene	118-74-1	10	330	10000	(20)	
79. Pentachlorophenol	87 - 86 - 5	25 ·	800	25000	(50)	
80. Phenanthrene	85-01-8	10	330	10000	(20)	
81. Anthracene	120-12-7	10	330	10000	(20)	
82. Carbazole	86-74-8	10	330	10000	(20)	
83. Di-n-butylphthalate	84-74-2	10	330	10000	(20)	
os. Di ii odeyipiiciialaee	, , , , ,		200	2000	(20)	
84. Fluoranthene	206-44-0	10	330	10000	(20)	
85. Pyrene	129-00-0	10	330	10000 .	(20)	
86. Butylbenzylphthalate	85-68-7	10	330	10000	(20)	
87. 3,3'-Dichlorobenzidine	91-94-1	10	330	10000	(20)	
88. Benzo(a)anthracene	56-55-3	10	330	10000	(20)	
SO Chamara	216 01 0	10	330	10000	(20)	
89. Chrysene	218-01-9	10	330	10000	(20)	
90. bis(2-Ethylhexyl)phthalate	117-81-7	10	330	10000	(20)	
91. Di-n-octylphthalate	117-84-0	10	330	10000	(20)	
92. Benzo(b) fluoranthene	205-99-2					
93. Benzo(k)fluoranthene	207-08-9	10	330	10000	(20)	
94. Benzo(a)pyrene	50-32-8	10	330	10000	(20)	
95. Indeno(1,2,3-cd)pyrene	193-39-5	10	330	10000	(20)	
96. Dibenz(a,h)anthracene	53-70-3	10	330	10000	(20)	
97. Benzo(g,h,i)perylene	191-24-2	10	330	10000	(20)	

<sup>\*</sup> Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQL)

	• .	<u>Quanti</u> Water	tation L Soil	imits* On Colu	mn
Pesticides/Aroclors	CAS Number	ug/L			
98. alpha-BHC	319-84-6	0.05	1.7	5 ·	
99. beta-BHC	319-85-7	0.05	1.7	5	
100. delta-BHC	319-86-8	0.05	1.7	5	
101. gamma-BHC (Lindane)	58-89-9	0.05	1.7	· 5	
102. Heptachlor	76-44-8	0.05	1.7	·5	
103. Aldrin	309-00-2	0.05	1.7	5	
104. Heptachlor epoxide	1024-57-3	0.05	1.7	5	
105. Endosulfan I	959-98-8	0.05	1.7	5	
106. Dieldrin	60-57-1	0.10	3.3	10	
107. 4,4'-DDE	72-55-9	0.10	3.3	10	
108. Endrin	72-20-8	0.10	3.3	10	
109. Endosulfan II	33213-65-9	0.10	3.3	10	
110. 4,4'-DDD	72 - 54 - 8	0.10	3.3	10	
lll. Endosulfan sulfate	1031-07-8	0.10	3.3	10	
112. 4,4'-DDT	50-29-3	0.10	3.3	10	
113. Methoxychlor	72-43-5	0.50	17.0	50	
114. Endrin ketone	53494-70-5	0.10	3.3	10	
115. Endrin aldehyde	7421-36-3	0.10	3.3	10	
116. alpha-Chlordane	5103-71-9	0.05	1.7	, 5	
117. gamma-Chlordane	5103-74-2	0.05	1.7	5	
118. Toxaphene	8001-35-2	5.0	170.0	500	
119. Aroclor-1016	12674-11-2	1.0	33.0	100	
120. Aroclor-1221	11104-28-2	2.0	67.0	200	
121. Aroclor-1232.	11141-16-5	1.0	33.0	100	
122. Aroclor-1242	53469-21-9	1.0	33.0	100	
123. Aroclor-1248	12672-29-6	1.0	33.0	100	
124. Aroclor-1254	11097-69-1	1.0	33.0	100	
125. Aroclor-1260	11096-82-5	1.0	33.0	100	

<sup>\*</sup> Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

There is no differentiation between the preparation of low and medium soil samples in this method for the analysis of Pesticides/Aroclors.

#### Contract Laboratory Program Target Analyte List Inorganic Quantitation Limits

	**.	SOIL	SEDIHENT
 COMPOUND	PROCEDURE	WATER	SLUDGE
Aluminus	ICP	200 ug/L	40 mg/Kg
Antimony	Furnace	60	2.4
Arsenic	Furnace	10	2
Barium	ICP	200	40
Beryllium	ICP	5	1
Cadmium	ICP	5	1
Calcium	ICP	5000	1000
Chromium	ICP	10	2
Cobalt	ICP	50	10
Copper	ICP	25	5
Iron	Icp	100	20
Lead	Furnace	5	1
Kagnesium	ICP	5000	1000
Manganese	ICP	15	3
Mercury	Cold Vapor	0.2	0.008
Nickel	ICP	40	8
Potassium	ICP	5000 .	1000
Selenium	Furnace	5	. 1
Silver	ICP	10	2
Sodium	ICP	5000	1000
Thallium	Furnace	10	2
Vanadium	ICP	50	10
Zinc	ICP	20	4
Cyanide	Color	10	2

### RAS

### **ORGANIC**

### GROUND WATER DATA

PA	GΕ	1	0F	

### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V

DATE	
SUBJECT:	Review of Region V CLP Data A., 27 1991  Received for Review on
FROM:	Curtis Ross, Director (5SCRL) Central Regional Laboratory
TO:	Data User: MPCA
	· · · · · · · · · · · · · · · · · · ·
	We have reviewed the data for the following case(s).  SITE NAME: SMO Case No.
	No. of D.U./Activity
•	EPA Data Set No Samples: Numbers
	CRL No.
	SMO Traffic No. ZNS 28-31, 33-34, 23  Hrs. Required
·	CLP Laboratory: Of towa for Review:
	Following are our findings: This review covers the analyses
of g	water and 2 sail sampler for BAS Volatile
a-can	rics. Role to the case would the
$\mathcal{Q}_{1}$	vics. Refu to the case varidation narrative :
ما داما س	Gran, fus.
	4
	Warmen Star O.
-	
199	-Data are acceptable for use. $^{\prime\prime}/^{\prime\prime}/^{\prime\prime}$
(* 🗴	Data are acceptable for use with qualifications referenced above.  See Data Qualifier sheets and Calibration Outlier forms for flags and Per
( )	additional comments.  Data are preliminary - pending verification by Contractor Laboratory.
	See Case Summary above.
	Data are unacceptable.
cc:	Carla Dempsey, CLP Quality Assurance Officer, Analytical Operations Branch James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

## STERN RUBBER AND TOOL CASE 16929 DELIVERY GROUP ENS 24 WATER AND SOIL - TCL VOLATILES

#### 1 HOLDING TIMES

Holding times for Volatile water and soil samples (sampling to analysis) ranged from 8 to 13 days; there is no indication from the Organic Traffic Report that water samples were preserved with HCl. Aromatic compounds in all samples have been qualified as "J" (estimated) due to possible low bias resulting from loss of aromatics.

#### 2 GC/MS TUNING

GC/MS mass tuning criteria were met for this delivery group.

#### 3 CALIBRATION

Calibration deficiencies are noted on the Calibration Outlier forms.

#### 4 LABORATORY BLANKS

Soil Method Blank VBLK15 contained Methylene chloride and Carbon disulfide at very low concentrations (2 and 1 ug/Kg respectively); Methylene chloride had been qualified "U" (non-detected) in the single soil sample ENS 33. Water Method Blank VBLK17 did not contain TCL compounds. Water Method Blank VBLK19 contained Methylene chloride at 2 ug/L; where present in associated Investigative samples Methylene chloride has been qualified as "U"

#### 5 FIELD BLANKS

ENS25 was identified as a Field Blank; there were no TCL compounds quantified in this sample.

#### 6 TRIP BLANKS

ENS24 was identified as a Trip Blank; there were no TCL compounds identified in this sample.

#### 7 SYSTEM MONITORING COMPOUNDS (SURROGATE SPIKES)

The number three System Monitoring Compound (1,2-Dichloroethane-d4) was recovered at a percentage slightly above the Contract Required Limits of 76-114% in EMS23 MS (120%) and EMS 23MSD (119%); this non-compliance did not result in qualification of Investigative sample compounds.

#### 8 MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD)

Both the Water MS/MSD and the Soil MS/MSD were within Contract Required QC Limits.

#### 9 INTERNAL STANDARDS PERFORMANCE

Internal Standards were within Contract Required QC Limits for all samples.

#### 10 TCL COMPOUND IDENTIFICATION

TCL Compounds quantitated in samples from this Delivery Group were identified using library mass spectra, and Relative Retention Times for these compounds were within the appropriate windows.

#### 11 COMPOUND QUANTITATION

TCL Compounds were quantitated as per the CLP Statement of Work.

#### 12 TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

TICs present in samples from this Sample Delivery Group were identified using the laboratories mass spectra library as per the CLP Statement of Work.

Warmiter !

#### AMENDMENT TO STERN RUBBER AND TOOL CASE 16929 DELIVERY GROUP ENS 24 WATER AND SOIL - TCL VOLATILES

11/13/91

#### 1 HOLDING TIMES

CLP Sample Traffic Tags indicated that VOC samples were preserved with HCl to a pH of <2; the "J" (estimated) qualifier has been removed from Aromatic VOC compounds on the Form I data sheets (technical holding times for Aromatic compounds in acid preserved water samples is 14 days). The original non-detect qualifier ("U") for these compounds should be considered appropriate.

Mauskil 11/13/91

			7/23 1/34		TCL VOLAT	ILES CALIB	RATION FOR	RM	(6)				1		
		Initial Cal.	Cont. Cal.	600008	alibration	Cont. Calib	ration	Cont. Calib	ration	Cont. Cali	bration	Cont. Cali	bration	Cont. Cali	bration
	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum
	RRF	%RSD	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD
Chlroromethane	0.01														
Bromomethane	0.10	< 20.5	< 25.0												
Vinyl chloride	0.10	< 20.5	< 25.0												
Chloroethane	0.01														
Methylene chloride	0.01														
Acetone	0.01														
Carbon disulfide	0.01														
1,1-Dichloroethene	0.10	< 20.5	< 25.0												
1,1-Dichloroethane	0.20	< 20.5	< 25.0												
1,2-Dichloroethene (total)	0.01														
Chloroform	0.20	< 20.5	< 25.0										-		
1,2-Dichloroethane	0.10	< 20.5	< 25.0												
2-Butanone	0.01				33-2										
1,1,1-Trichloroethane	0.10	< 20.5	< 25.0												
Carbon tetrachloride	0.10	< 20.5	< 25.0												
Bromodichloromethane	0.20	< 20.5	< 25.0												
1,2-Dichloropropane	0.01														
cis-1,3-Dichloropropene	0.20	< 20.5		******										_	
Trichloroethene	0.30	< 20.5		<i>*************************************</i>											
Dibromochloromethane	0.10	< 20.5	< 25.0	200000											
1,1,2-Trichloroethane	. 0.10			*******											
Benzene	0.50	< 20.5		4000000											
trans-1,3,-Dichloropropene	0.10	< 20.5	< 25.0	-000000											
Bromoform	0.10	< 20.5	< 25.0												
4-Methyl-2-pentanone	0.01														
2-Hexanone	0.01				32.0										
Tetrachloroethene	0.20														
1,1,2,2-Tetrachloroethane	0.50			-0000000		0,441	25.6	0.478	19.4	-					
Toluene	0.40			-300000	27										
Chlorobenzene	-			4000000											
Ethylbenzene		-		-000000											
Styrene															
Xylenes (total)				-000000											
Bromofluorobenzene	0.20	< 20.5	< 25.0									,	-		
							-								
Toluene-d8					,										
1,2-Dichloroethane-d4	0.01											-			
			Associated Samples			YBIK 17	ENS 27	VBIK19 EMS 29 EMS 28 EMS 31	EMS 34						
		Associated				ENS 23	ENS 30	EMS 29							
		Associated				ENS 24	ENS 23 M	ENS 28							
		Associated	d Samples			ENSX	FIX 23 mg	EM 31							

				7/24	925	TCL VOLATILES CALIBI									
		Initial Cal.	Cont. Cal.	Initial C	libration	Cont. Calib	ration	Cont. Calil	bration	Cont. Calil	ration	Cont. Cali	bration	Cont. Cali	bration
	Minimum	Minimum	Minimum	Minimum	Minimum						1		Minimum		Minimum
	RRF	%RSD	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD
Chlroromethane	0.01														
Bromomethane	0.10	< 20.5	< 25.0												
Vinyl chloride	0.10	< 20.5	< 25.0						<u> </u>	<u> </u>					
Chloroethane	0.01														
Methylene chloride	0.01														
Acetone	0.01								ļ				ļ <u>.</u>		
Carbon disulfide	0.01														
1,1-Dichloroethene	0.10		< 25.0	**************************************	ļ				ļ	ļ		ļ	ļ		<u> </u>
1,1-Dichloroethane	0.20	< 20.5	< 25.0	·					<u> </u>	ļ	ļ			ļ	<b> </b>
1,2-Dichloroethene (total)	0.01				ļ <u> </u>	<u> </u>				ļ				<u> </u>	ļ
Chloroform	0.20	<b>.</b>	< 25.0	<u></u>	-	· · · · · ·		ļ <u>-</u>	ļ	ļ:	ļ		<u> </u>	ļ	ļ
1,2-Dichloroethane	0.10	< 20.5	< 25.0		\ <u> </u>				·	ļ				ļ <u> </u>	ļ
2-Butanone	0.01			<u> </u>	20.5	<u> </u>			<u> </u>	<u> </u>	ļ	ļ	<del> </del>	-	<u> </u>
1,1,1-Trichloroethane	0.10		< 25.0	<u> </u>		<u> </u>			-		ļ	<u> </u>		- <del> </del>	
Carbon tetrachloride	0.10		< 25.0	<u> </u>	ļ				<del> </del>	<u> </u>	<u> </u>	ļ			
Bromodichloromethane	0.20	< 20.5	< 25.0	·	<del> </del>	ļ		ļ	ļ	ļ				ļ	
1,2-Dichloropropane	0.01		25.0	<u></u>	<del> </del>	<u> </u>	<u> </u>	ļ	<del> </del>	<del> </del>	<del> </del>	ļ	ļ	<del></del>	ļ
cis-1,3-Dichloropropene	0.20	<u> </u>	1	<b></b>		ļ			ļ	<del> </del>	<del> </del>			<u> </u>	<del> </del>
Trichloroethene	0.30		< 25.0	<u> </u>		<u> </u>		<u> </u>	<del> </del>	- <del> </del> -	ļ	<del> </del>	ļ. <u>.</u>	<del> </del>	
Dibromochloromethane	0.10		< 25.0	<u> </u>	<del> </del>	<u> </u>		<u> </u>		ļ	<del> </del>		<del> </del>		
1,1,2-Trichloroethane	0.10		< 25.0	<u> </u>	<del>-</del>	-				ļ	-	-		- <del></del>	ļ
Benzene	0.50		< 25.0		ļ	<del> </del>			<del> </del>	-	-	- <del></del>	ļ	<del></del>	ļ
trans-1,3,-Dichloropropene	0.10		1	<u> </u>							<del> </del>	<del> </del>		ļ	
Bromoform	0.10	< 20.5	< 25.0			<del> </del>	ļ			<del>- </del>	·		<del> </del>	<del> </del>	
4-Methyl-2-pentanone 2-Hexanone	0.01	<del> </del>		<u></u>		<del> </del>	<del> </del>	ļ ——	ļ- <u>-</u>	<del> </del>		<del>-</del>	ļ	<del> </del>	<del> </del>
Z-nexanone Tetrachloroethene	0.20		< 25.0		<u> </u>	<del> </del>			<del> </del>	-		ļ	<del> </del>	<b>-</b>	-
	0.20				<del></del> -	<del></del>	<del></del>	<u> </u>		-	<del></del>		-[		
1,1,2,2-Tetrachloroethane	<del> </del>					<del> </del> -	<del> </del>			<del> </del>		<del></del>	<del> </del>	- <del> </del>	-
Toluene Chlorobenzene				<u> </u>		ļ	<del> </del>	·	-		-	-	-	<del> </del>	-
Ethylbenzene			+	3333333		<u> </u>	1	<del> </del> -	-	-	<del> </del>			-	
Styrene	+			6707000	<del></del>		<del> </del>	<del> </del>		<del> </del>	<del> </del>				-
Xylenes (total)	·		<del></del>	44/4/4		<del>-</del>	<del> </del>	-	-	<del> </del>	<del></del>	<del> </del>	<del> </del>	-	-
Ayienes (total) Bromofluorobenzene	<del></del>	·		300000		-	<del> </del>			ļ	-	-	-		
DI VINO HUVI OVENZENE	0.20	20.5	20.0	<u> </u>		-		<del> </del>	<del></del>			<del> </del>	<del></del>		<del> </del>
Toluene-d8	0.01	1		<u> </u>	-1	<del> </del>	-	<del> </del>	<del> </del>	<del> </del>	<del>                                     </del>		<del> </del>	+	
1,2-Dichloroethane-d4			<del> </del>			<del> </del>	<del> </del>	<del> </del> -			<del> </del>	-	<del> </del>	<del>                                     </del>	<del> </del>
1/2 Dicinoractifational	0.01	Associated	l Camples	y AIV II d		Valler	CUE 21		-			<del> </del>			
	<del> </del>	Associated		MAN	<del>                                     </del>	ARIKI2	ENS26	<b> </b>				-		-]	-
· · · · · · · · · · · · · · · · · · ·	<del> </del>	Associated				ENS 22	<u>.</u>	<u> </u>	-				<del> </del>	-	-
<del></del>	<del> </del>	Associated		K hera i		ENS 33 N	*	<u> </u>		<u> </u>	<del> </del>		<del> </del>		
	<u> </u>	Masociater	1 Ognihing		1	145 × 75/V	(1) (1) (1) (1) (1) (1) (1) (1)	<u> </u>	-1	<u> </u>			<u> </u>	<u> </u>	

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

#### CHAIN OF CUSTODY RECORD

CHAI	IN OF CUS	TUDY	HEL	OKL	<u>ر</u>					Chicago, Illinois 60604
PROJ. NO.   PROJECT NAME 914F5H STERN RUBBER & TOOL	NO.		ı				7/			
SAMPLERS: (Signafore)			/	/ /						
Susan Pager	OF					/ /	/ /			REMARKS
1	CON-	/	', /	/ /		/ /	/ /			NEWANNS
STA. NO. DATE TIME O STATION LOCATION	TAINERS	2	<i>t/</i>			//		EPA-	TREA	#5
RU3 8/4/11							-			
ROU SETI										
O Lit										
	<del> </del>	-								
SO9 196/11 2015 Y SPIKE, MONW-1	6,40ml	X					1	13695		
ROS 8/7/9 1005 V FIELD BLANK, SW-1	2,40ml	X					511	4376°	1-77	<del>1</del> D
SID   81741 1015   Y SPIKE, SW-1	6,40ml	Y					510	5		
SII 8/7/11 1025 X DW-1	2,40m	X					51	5 <b>4</b>		
SIZ 8411 1115 X DSW-1	2,40ml							(43755		
S16 8/7/91 1330 Y UW-1	2,40ml						510	13771	77	2_
RO3 8/LAI 0830 X TRIPBIANK	2,40mL	Ϋ́					51	>		
ROY BILLY 1830 X FIELD BLANK, MONW-1	2,40ml	1					51	2		
DOZ 8/6/91/ 2010 X OUPE, MIDNW-1	2,40ml	X					511	4		
54 817 h1 1040 055-1	2,402	ÌÌ					5143759-760			
Sila							-			
515 817A1 915 BS-1	2,402	V					51	4376	1-76	2
Relinquished by; (Signature) Date / Time Received by: (Signature)		Relino	uishe	d by:	(Signa	ture)			Time	Received by: (Signature)
Swan laxy 8/8/91/1430				•						
Relinquished by: (Signature) Date / Time Received by: (Signature	re)	Relino	uishe	d by:	(Signa	tura)		Date /	Time	Received by: (Signature)
						•-				
Relinquished by: (Signature) Date / Time Received for Laborat	ory by:		Date	/Time		Remai	rks	CFAI +	£5 C	16554, 96555
(Signature)	F1	Ory by: Date / Time Remarks COC SEAL # S 96554, 96 COC SEAL # S 96554, 96 AIRBILL# 0726937363					217/2			
Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files	AIRBILLE 0776937363  BS; Yellow - Laboratory File LAB! UNIVERSITY OF 101					Y OF INDA				
CHO! WINDEST! I OF TOWARD										

<b>≎EPA</b>		ct Laboraton PO Bo	y Progr x 818	ram Alexa	Sample	tection Agency e Management Office VA 22313	Organic Traffic Report (For CLP Use Only)  Case Number   SAS No. (if applicable)									
1. Sample Description	•	Column A)	·557-24			gión Number Sampling Co.	<u> </u>	pped   Airbill Number		5. Date Receive 8/9/91	ed_F	Received by		<u>.</u> سرور	<del></del>	
<ol> <li>Surface Wate</li> <li>Ground Wate</li> <li>Leachate</li> <li>Rinsate</li> <li>Soil/Sedimer</li> </ol>	er r nt <	D6# EN	(3)2	3	3. Sh	ip To:	Carrier	me required for matrix icate aqueous sample.		Laboratory Con (08 D (0 0) 6. Transfer to	Number	Jait Price	2.5	1 <u>.                                    </u>		
6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (	•	<b>,</b>		i	1 10.7	MARCHINE WITH TO HA STORE HAT KICHARD SWILL	samples in	um and high concentrat paint cans. • e for additional instructi	}	Received by  Contract Numb	F	Price				
CLP	(A) Sample	(B) Concen-	RA	(C) S Anal	٠	(D)	(E)	(F) Date/Time of		(G)		(H)		(I) High Phas (Check b		onc.
Sample Number (From labels)	Descrip- tion (From box 1)	tration L=low M=med H=high	VOA	BNA	Pest/ PCB	Special Handling	Station Location	Sample Collection	CL	P Inorganic Sample Number		Samp Condit on Rec	ion		Wa- ter— MIS Liq.	Non Wa- ter— MIS Liq.
MSSA	2		У				TKILBUNK	8/6/91,0830	•		11/	17ACT				
LN375	2	L	Υ.			Delick Eding	THUNERAL	2/1/11/11/10/20			1					
FS2NJ	2	L	X				HIMM-1	8/6/91, 7010								
UNS75	2	L	Ϋ́			シャゼ	MUNW-1	36/11,7015								
(NS21)		L	X				SM - L	3/7/11, 1005					`\.			
LNS23	.1	レ	X			SI 11(E	SM-1	9/7/11,1015								
الرسو كالمال	2_	し	X				LW-1	87191,1175								
183M	2	レ	X				1-W20	15/7/11 MO								
[NO24]	2	レ	χ				11W-1	5/7/11 1230								
[N5 33	5	L.	V				1-000	0/4/91,1040								
CNS 26	5	L	X				15-1	8/7/11,0715			1					
	 												<del></del>	-1-		
·										· · · · · · · · · · · · · · · · · · ·	Ti	nel	Sam	sle	,	
											<u> </u>		/			
								·								
			L													
												·	:			
			ĺĺ				1	1			l					1

118

EPA SAMPLE NO.

			ENS24	
Lab Name: HYGIENIC LAB	Contract:	68-D0-0154		_
Lab Code: IOWA Case No.: 16929	SAS No.:	SDG	No.: ENS23	_
Matrix: (soil/water) WATER		Lab Sample ID:	9110451	7007
Sample wt/vol: 5.0 (g/mL) ML	_	Lab File ID:	V1085	
Level: (low/med) LOW		Date Received:	08/09/91	NS.N
% Moisture: not dec		Date Analyzed:	08/17/91	Z
GC Column: DB-624 ID: 0.530 (mm)		Dilution Factor	: 1.0	
Soil Extract Volume: (ul)		Soil Aliquot Vo	lume:(ul)	)
	CONCEN	TRATION UNITS:		

	CAS NO.	COMPOUND	(ug/L or ug/	_	Q	
;				 	1	1
1	74-87-3	-Chloromethane		10	! U	ł.
1	74-83-9	-Bromomethane		10	: U	1
1	75-01-4	-Vinyl Chloride		10	! U	i i
1	75-00-3	-Chloroethane		10	! U	i i
I	75-09-2	-Methylene Chloride		10	1 U	i
1	67-64-1	-Acetone -Carbon Disulfide		10	! U	į.
1	75-15-0	-Carbon Disulfide		10	! U	1
1	75-35-4	-1,1-Dichloroethene		10	: U	
i	75-34-3	-1,1-Dichloroethane		10	; U	i
1	540-59-0	-1,2-Dichloroethene	(total)!	10	; U	£
1	67-66-3	-Chloroform	;	10	i U	i i
1	107-06-2	-1,2-Dichloroethane	:l	10	! U	l
1	78-93-3	-2-Butanone		10	! U	ŀ
1	71-55-6	-2-Butanone -1,1,1-Trichloroeth	ane	10	: U	ŀ
1	56-23-5	-Carbon Tetrachlori	de	10	; U	1
1	75-27-4	-Bromodichlorometha	ne !	10	:U	1
1	78-87-5	-1,2-Dichloropropar	ie :	10	IU	1 , ,
1	10061-01-5	-cis-1,3-Dichloropr	opene	10	:U	11/1/20
1	79-01-6	-Trichloroethene		10	:U	1 0 1/16
1	124-48-1	-Dibromochlorometha	ne	10	!U	I
1	79-00-5	-1,1,2-Trichloroeth	ane	10	lU .	;
1	71-43-2	-Benzene		10	107	ł
!	10061-02-6	-Benzene -trans-1,3-Dichlord	propene	10	lU	1
1	75-25-2	-Bromoform		10	!U	! 4
1	108-10-1	-4-Methyl-2-Pentand	ne	10	IU	la is
!	591-78-6	-2-Hexanone		10	lU	> wan.
1	127-18-4	-Tetrachloroethene		10	IU	tex 191
ì	79-34-5	-1,1,2,2-Tetrachlor	oethane	10	IU ,	11/13/
1	108-88-3	-Toluene	1	10	IU D	1
1	108-90-7	-Chlorobenzene		10	IU7	1
!	100-41-4	-Ethylbenzene	·i	10	1117	1
1	100-42-5	-Styrene		10	IU #	1
1	1330-20-7	-Styrene -Xylene (total)		10	UZ	1
:					}	1

	EPA	SAMPLE	NO.
1	FNS	324	

TENTATIVELY IDENTIFIED COM	MPOUNDS ENS24	
Lab Name: HYGIENIC LAB . Co		
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: EN	S 2 3
Matrix: (soil/water) WATER	Lab Sample ID: 911045	1
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: V1085	
Level: (low/med) LOW	Date Received: 08/09/	۵۱ -
% Moisture: not dec.	Date Analyzed: 08/17/	91 7
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0	_
Soil Extract Volume: (ul)	Soil Aliquot Volume:	(ul)
	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>	
CAS NUMBER   COMPOUND NAME		====
		ii

Soil Extract Volume: (ul)

EPA SAMPLE NO.

Soil Aliquot Volume: \_\_\_\_(ul)

VOLATILE ORGANICS ANALYSIS	DATA SHEET
Lab Name: HYGIENIC LAB	! ENS25 Contract: 68-D0-0154 !
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) <u>WATER</u>	Lab Sample ID: 9110452
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: V1086
Level: (low/med) <u>LOW</u>	Date Received: <u>08/09/91</u>
% Moisture: not dec	Date Analyzed: <u>08/17/91</u>
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0

CONCENTRATION UNITS: CAS NO. COMPOUND Q (ug/L or ug/Kg) UG/L ΙU 74-87-3-----Chloromethane\_\_\_\_\_ 74-83-9----Bromomethane\_\_\_\_\_ 10 ΙU 75-01-4-----Vinyl Chloride\_\_\_\_\_ 10 ŀυ 75-00-3----Chloroethane\_\_\_\_\_ 10 75-09-2----Methylene Chloride\_\_\_\_ 2 67-64-1----Acetone\_\_\_\_ ! U 10 75-15-0----Carbon Disulfide\_\_\_\_\_ ! U 10 75-35-4----1,1-Dichloroethene\_\_\_\_\_ 10 ! U 75-34-3----1,1-Dichloroethane\_\_\_\_\_ 10 !U 540-59-0----1,2-Dichloroethene (total)\_\_\_ 10 : U 67-66-3----Chloroform\_\_\_\_\_ 10 ; U 107-06-2----1, 2-Dichloroethane\_\_\_\_\_ 10 10 78-93-3----2-Butanone\_\_\_\_\_ 10 ! U 71-55-6----1, 1, 1-Trichloroethane\_\_\_\_\_ 10 : U 56-23-5----Carbon Tetrachloride\_\_\_\_\_ 10 !U 75-27-4----Bromodichloromethane\_\_\_\_ ; U 10 78-87-5----1,2-Dichloropropane\_\_\_\_\_ 10 ! U 10061-01-5----cis-1,3-Dichloropropene\_\_\_\_ 10 ! U 79-01-6----Trichloroethene\_\_\_\_\_ 10 :U 124-48-1----Dibromochloromethane ΙU 79-00-5----1, 1, 2-Trichloroethane\_\_\_\_\_ 10 !U 71-43-2----Benzene\_ 102 10 10061-02-6----trans-1,3-Dichloropropene\_\_\_\_ 10 ΙU 75-25-2----Bromoform\_\_\_\_ 10 1 U 108-10-1----4-Methyl-2-Pentanone\_\_\_\_\_ 10 IU 591-78-6----2-Hexanone\_\_\_\_\_ 10 ! U 127-18-4----Tetrachloroethene\_\_\_\_ 10 ΙU 1 U 79-34-5----1, 1, 2, 2-Tetrachloroethane\_\_\_\_! 10 108-88-3----Toluene\_\_\_\_ 10 108-90-7-----Chlorobenzene\_\_\_\_ 10 10 100-41-4-----Ethylbenzene\_\_\_\_\_ 100-42-5----Styrene\_\_\_\_\_ 107 10 : UZ 1330-20-7-----Xylene (total)\_\_\_\_\_

	E	ΞP	Α		S	Α	M	P	L	Ε		N	0		
!			-	-	_	-	_	_	-	_	-	~	-	-	

TENTATIVELY IDENTIFIED COM	
Lab Name: HYGIENIC LAB Co	! ENS25 entract: 68-D0-0154
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) WATER	Lab Sample ID: 9110452
Sample wt/vol:	Lab File ID: V1086
Level: (low/med) LOW	Date Received: 08/09/91
% Moisture: not dec	Date Analyzed: 08/17/91
GC Column: DB-624   ID: 0.530 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (ui)	Soil Aliquot Volume:(ul)
	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L
CAS NUMBER   COMPOUND NAME	l RT   EST. CONC.   Q

	<u>_</u>	٣	Α		3	м	١٧١	۲	_	ㄷ		N	U	•	
	 _	_	_	_	_	_	_	_	_	_	_	_	_	_	
ŀ															ł
					_	_									

_ab Name: HYGIENIC LAB	ENS27 ; Contract: 68-D0-0154 ;
_ab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) WATER	Lab Sample ID: 9110454
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: V1087
_evel: (low/med) <u>LOW</u>	Date Received: $08/09/91$
% Moisture: not dec.	Date Analyzed: 08/17/91  Dilution Factor: 1.0
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Volume: (ul)
	CONCENTRATION UNITS:
CAS NO. COMPOUND	(ug/L or ug/Kg) <u>UG/L</u> Q
74-87-3	10   U   10   U

## 1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

	EPA	SAMPLE	NO.
- : :	ENS	327 ·	

72	1 ENC 27
Lab Name: HYGIENIC LAB C	ENS27 
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) WATER	Lab Sample ID: 9110454
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: V1087
Level: (low/med) LOW	Date Received: <u>08/09/91</u>
% Moisture: not dec.	Date Analyzed: <u>08/17/91</u>
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
Number TICs found:1	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>
CAS NUMBER   COMPOUND NAME	RT   EST. CONC.   Q

	E.	٢	А	٤	А	.IVI	٢	L	E		N	V	•	
		_			-	_	_	_	_	_	_	_	_	1
- 1		_	N 1 4											1

	i ENS28 i
Lab Name: HYGIENIC LAB	Contract: 68-D0-0154
Lab Code: IOWA Case No.: 169	9 SAS No.: SDG No.: ENS23
Matrix: (soil/water) <u>WATER</u>	245 Samp 10 13.
Sample wt/vol: 5.0 (g/mL)	ML Lab File ID: V1096
Level: (low/med) LOW	Date Received: 08/09/91
% Moisture: not dec.	Date Analyzed: 08/19/91
GC Column: <u>DB-624</u> ID: <u>0.530</u>	mm) Dilution Factor: 1.0
Soil Extract Volume: (ul	Soil Aliquot Volume:(ul)
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q
74-87-3	e

FORM I VOA

# 1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

	EPA	SAMPLE	NO.
Ļ			
;	ENS	328	

TENTALIVELY IDENTIFIED	! ENS28
Lab Name: HYGIENIC LAB	
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) WATER	Lab Sample ID: 9110455
Sample wt/vol: $5.0 \text{ (g/mL)} \underline{\text{MU}}$	Lab File ID: <u>V1096</u> <b>D</b>
Level: (low/med) LOW	Date Received: 08/09/91
% Moisture: not dec.	Date Analyzed: <u>08/19/91</u>
GC Column: DB-624   ID: 0.530 (mr	n) Dilution Factor: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
Number TICs found:0	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>
CAS NUMBER   COMPOUND N	NAME
	!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

		_	_	H		3	Н	IVI	_	١.,	드		17	v	•	
	_	_	_	_		_	_	_	_	_	_	_	_	_	_	
1																í
1			_	N	c	2	۵									1

Lab Name: HYGIENIC LAB	ENS29   Contract: 68-D0-0154
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) WATER	Lab Sample ID: 9110456
Sample wt/vol: 5.0 (g/mL) ML	•
Level: (low/med) LOW	Date Received: 08/09/91
% Moisture: not dec.	Date Received: 08/09/91 (C)  Date Analyzed: 08/19/91
GC Column: DB-624   ID: 0.530 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u> Q
74-87-3	10   U   10
71-43-2Benzene	10   U     U     U     U     U     U     U     U     U     U     U     U   U     U     U     U     U     U     U   U     U     U     U     U     U     U     U     U     U     U     U     U     U     U   U

## 1 E

1E	EPA SAMPLE NO.
VOLATILE ORGANICS ANALYSI TENTATIVELY IDENTIFIED	COMPOUNDS
_ab Name: HYGIENIC LAB	ENS29   Contract: 68-D0-0154
_ab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) <u>WATER</u>	Lab Sample ID: 9110456
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: V1095
_evel: (low/med) LOW	Date Received: 08/09/91
% Moisture: not dec.	Date Analyzed: 08/19/91
GC Column: DB-624   ID: 0.530 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
Number TICs found:0	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>
CAS NUMBER L COMPOUND NA	ME L DT L EST CONC L O

EPA SAMPLE NO.

•	!	<u> </u>
Lab Name: HYGIENIC LAB Cont	ENS30   tract: <u>68-D0-0154</u>	;
Lab Code: IOWA Case No.: 16929 SAS	S No.: SDG No.: ENS23	
Matrix: (soil/water) WATER	Lab Sample ID: 9110457	
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: <u>V1090</u>	
Level: (low/med) LOW	Date Received: $08/09/91$	
% Moisture: not dec.	Date Analyzed: 08/17/91	-
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0	,
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)	
	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u> Q	
74-87-3	10   U   10	91
10061-02-6trans-1,3-Dichlorop   75-25-2Bromoform   108-10-14-Methyl-2-Pentanon   591-78-62-Hexanone   127-18-4Tetrachloroethene   79-34-51,1,2,2-Tetrachloro   108-88-3Toluene   108-90-7Chlorobenzene   100-41-4Ethylbenzene   100-42-5Styrene	propene   10  U     10  U   10  U       10  U       10  U       10  U       10  U       10  U       10	3/9 3/9

EPA SAMPLE NO.

## 1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

TENT				
Lab Name: HYGIENIC	C LAB	Contract: <u>68-D0-0154</u>	ENS30	
Lab Code: IOWA	Case No.: 16929	SAS No.: SDG I	No.: <u>ENS23</u>	
Matrix: (soil/wate	er) <u>WATER</u>	Lab Sample ID:	9110457	
Sample wt/vol:	5.0 (g/mL) ML	Lab File ID:	V 1 0 9 0	
Level: (low/med	d) LOW	Date Received:	08/09/91	
% Moisture: not de	ec	Date Analyzed:	08/17/91	
GC Column: DB-624	ID: <u>0.530</u> (mm)	Dilution Factor	: 1.0	
Soil Extract Volum	ne: (ul)	Soil Aliquot Vo	lume:(ul)	
Number TICs found	i: <u> </u>	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>		
	COMPOUND NAM	ME   RT   EST.	•	
}				

EPA SAMPLE NO.

Lab Name: HYGIENIC LAB	ENS31   Contract: 68-D0-0154
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) WATER	Lab Sample ID: 9110458
Sample wt/vol: $5.0 (g/mL) N$	Lab Sample ID: 9110458  Lab File ID: V1097
Level: (low/med) LOW	Date Received: 08/09/91
% Moisture: not dec.	Date Analyzed: 08/19/91
GC Column: DB-624 ID: 0.530 (m	m) Dilution Factor: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u> Q
74-87-3	10   U

## 1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

		_	Г	Α		3	Η	IVI	۲	<u>_</u>	_		N	U	٠
	_	_	_	_	_	_	_	_	_	_		_	_		_
ł															
			_												

TENTALIVELY IDENTIFIED C	ENS31					
Lab Name: HYGIENIC LAB	Contract: 68-D0-0154					
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23					
Matrix: (soil/water) WATER	Lab Sample ID: 9110458					
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: V1097					
Level: (low/med) LOW						
% Moisture: not dec.	Date Received: 08/09/91  Date Analyzed: 08/19/91					
GC Column: DB-624 ID: 0.530 (mm)						
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)					
Number TICs found:0	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/L</u>					
CAS NUMBER   COMPOUND NAM	ME   RT   EST. CONC.   Q					

	Е	P	А	S	A	M.	PL	.Е		N	0	•
ı					_				_	_	<b>-</b>	_
1	•	_	NIC		,							

Lab Name: HYGIENIC LAB	ENS34   Contract: 68-D0-0154
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) WATER	Lab Sample ID: 9110460
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: V1098
Level: (low/med) <u>LOW</u>	
% Moisture: not dec.	Date Analyzed: 08/19/91
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
CAS NO. COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L Q
   74-87-3Chloromethane	
74-83-9Bromomethane   75-01-4Vinyl Chloride   75-00-3Chloroethane	10   U
75-09-2Methylene Chlo   67-64-1Acetone	ride   10  U   10  U
75-15-0Carbon Disulfi 75-35-41,1-Dichloroet	de   10   U
75-34-31,1-Dichloroet   540-59-01,2-Dichloroet   67-66-3Chloroform	hene (total)! 10  U
107-06-21,2-Dichloroet 178-93-32-Butanone	hane I 10 IU I
71-55-61,1,1-Trichlor   56-23-5Carbon Tetrach	oethane  10  U     loride  10  U
75-27-4Bromodichlorom   78-87-51,2-Dichloropr	opane 1
1 10061-01-5cis-1,3-Dichlo 1 79-01-6Trichloroethen	e   10   U   10
124-48-1Dibromochlorom   79-00-51,1,2-Trichlor   71-43-2Benzene	oethane  10 IU
! 10061-02-6trans-1,3-Dich	loropropene! 10  U
1 108-10-14-Methyl-2-Pen	
: 591-78-62-Hexanone : 127-18-4Tetrachloroeth : 79-34-51,1,2,2-Tetrac	hloroethane : 10 (U / (V~ )q)
108-88-3Toluene 108-90-7Chlorobenzene_	10 10 10
100-41-4Ethylbenzene   100-42-5Styrene   1330-20-7Xylene (total)	10  U
1	

## 1E VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED (	COMPOUNDS : : ENS34 :
Lab Name: HYGIENIC LAB	Contract: 68-D0-0154
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) <u>WATER</u>	Lab Sample ID: 9110460
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID. VI098
Level: (low/med) LOW	Date Received: 08/09/91
% Moisture: not dec.	Date Received: 08/09/91  Date Analyzed: 08/19/91
GC Column: DB-624   ID: 0.530 (mm)	
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
Number TICs found: 0	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L
CAS NUMBER   COMPOUND NAM	ME   RT   EST. CONC.   Q

#### 1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA	SAMPLE	NO.
;		

		1 1 VDLV45	' 1 (
Lab Name: HYGIENIC LAB Contract	t: <u>68-D0-0154</u>	! VBLK15 !	;
Lab Code: IOWA Case No.: 16929 SAS No.	:SDG	No.: ENS2	
Matrix: (soil/water) <u>SOIL</u>	Lab Sample ID:	VBLK15	7007
Sample wt/vol: 5.0 (g/mL) G	Lab File ID:	B1334	Q
_evel: (low/med) <u>LOW</u>	Date Received:	08/15/91	
% Moisture: not dec.	Date Analyzed:	08/15/91	INSTR
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor	r: <u>1.0</u>	_
Soil Extract Volume: (ul)	Soil Aliquot Vo	olume:	(ul).
CONCE	ENTRATION UNITS:		
	or ug/Kg) <u>UG/K</u> 0	<u>a</u> Q	
	1		-
74-87-3Chloromethane		10 ¦U	1
74-83-9Bromomethane		10 IU	1
75-01-4Vinyl Chloride	1	10 (U	1
75-00-3Chloroethane		10 ¦U	•
i /5-09-2Methylene Chloride	<b>:</b>	2 ¦J	+
67-64-1Acetone	1	10 IU	1
i /5-15-0Carbon Disulfide	}	1   J -	-
75-35-41,1-Dichloroethene		10 10	1
75-34-31,1-Dichloroethane		10   U	
540-59-01,2-Dichloroethene (tot	al):	·10 [U	i .
67-66-3Chloroform		10 IU	<u> </u>
107-06-21,2-Dichloroethane		10 IU	
78-93-32-Butanone 71-55-61,1,1-Trichloroethane		10 IU	
/1-55-61,1,1-Trichloroethane		10 10	
56-23-5Carbon Tetrachloride		10 10	i
75-27-4Bromodichloromethane		10 10	i I
78-87-51,2-Dichloropropane   10061-01-5cis-1,3-Dichloropropene	i	10 10	i I
79-01-6Trichloroethene	'	10 10	; 1
1 124-48-1Dibromochloromethane		10   U	ı
79-00-51, 1, 2-Trichloroethane		10 IU 10 IU	1
1 71-43-2		10 10	i !
71-43-2Benzene   10061-02-6trans-1,3-Dichloroprope	'	10   U	!
75-25-2	!	10 10	:
75-25-2Bromoform   108-10-14-Methyl-2-Pentanone	'	10 10	
591-78-62-Hexanone	'	10 10	1
1 127-18-4Tetrachloroethene		10 10	•
1 79-34-51, 1, 2, 2-Tetrachloroetha	ne l	10   U	1
108-88-3Toluene	1.	10 IU	1
108-90-7Chlorobenzene		10 IU	}
100-41-4Ethylbenzene		10 IU	1
1 100-42-5Styrene		10 ¦U	
100-42-5Styrene   1330-20-7Xylene (total)		10 1 U	t 1

## 1E

	EPA	SAMPLE	E NO.
	~~	<del>.</del>	
1			
1	VBI	_K 15	

VOLATILE ORGANICS ANALYSIS TENTATIVELY IDENTIFIED C	OMPOUNDS
Lab Name: HYGIENIC LAB	VBLK15   Contract: 68-D0-0154
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) SOIL	Lab Sample ID: VBLK15
Sample wt/vol: $5.0 (g/mL) G$	Lab File ID: B1334
Level: (low/med) LOW	Date Received: <u>08/15/</u> 91
% Moisture: not dec.	Date Analyzed: 08/15/91
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
Number TICs found: 0	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>
CAS NUMBER   COMPOUND NAM	E : RT   EST. CONC.   Q
1	1 ! !

## VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: HYGIENIC LAB	Contract: 68-D0-0154   VBLK17	_ ;
Lab Code: IOWA Case No.: 16929		
Matrix: (soil/water) <u>WATER</u>	Lab Sample ID: VBLK17	7007
Sample wt/vol: 5.0 (g/mL) ML	1 - 5 - 1 - 1 - 5 - 5 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6	<u>`</u>
Level: (low/med) LOW		
% Moisture: not dec	Date Analyzed: 08/17/91	NSTR
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0	
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul	)

CONCENTRATION UNITS:

	CAS NO.	COMPOUND	(ug/L or ug,	/Kg) <u>UG/L</u>		Q	
!				!		!	
1	74-87-3	-Chloromethane		10	: U	1	
!	74-83-9	-Bromomethane		10	! U	;	
;	75-01-4	-Vinvl Chloride		10	! U	1	
!	75-00-3	-Chloroethane		10	! U		
1	75-09-2	-Methylene Chloride		10	: U	1	
1	67-64-1	-Acetone		10	l U	1	
1	75-15-0	-Acetone -Carbon Disulfide		10	:U	1	
1	75-35-4	-1.1-Dichloroethene		10	; U	1	
1	75-34-3	-1,1-Dichloroethane		! 10	I U	+	
1	540-59-0	-1,2-Dichloroethene	(total)	10	! U	ł	
1		-Chloroform		10	I U	1	
t t	107-06-2	-1,2-Dichloroethane		10	i U	1	
ŀ	78-93-3	-2-Butanone		10	! U	1	
1	71-55-6	-1,1,1-Trichloroeth	ane	10	! U	;	
1	56-23-5	-Carbon Tetrachlori	de	10	: U	1 1	
1	75-27-4	-Bromodichlorometha	ne	10	١U	I	
1	78-87-5	-1,2-Dichloropropan	e	10	! U	1	
;	10061-01-5	-cis-1,3-Dichloropr	opene	10	: U	1	
!	79-01-6	-Trichloroethene		10	: U	1	
1	124-48-1	-Dibromochlorometha	ne	10	: U	!	
1	79-00-5	-1,1,2-Trichloroeth	ane	10	1 U	1	
:	71-43-2	-Benzene		10	IU	1	
1	10061-02-6	-trans-1,3-Dichloro	propene	10	: U	1	
I	75-25-2	-Bromoform		10	! U	1	
1	108-10-1	-4-Methyl-2-Pentano	ne	10	IU	1	
1	591-78-6	-2-Hexanone		10	: U	1	
! .	127-18-4	-Tetrachloroethene_		10	l U	1	
!	79-34-5	-1,1,2,2-Tetrachlor	oethane	10	: U	1	
1	108-88-3	-Toluene		10	IU	1	
1	108-90-7	-Chlorobenzene		10	IU	1	
!	100-41-4	-Ethylbenzene		10	l U	:	
!	100-42-5	-Styrene		10	!U		
1	1330-20-7	-Xylene (total)		10	IU		
1		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			!	į	
-					- '		

	EPA	SAMPLE	E NO.
1			
;	VBL	_K 1 7	. !

TENTATIVELY IDENTIFIED COMPOUNDS		
Lab Name: HYGIENIC LAB Contract:	: <u>68-D0-0154</u>	VBLK17
Lab Code: IOWA Case No.: 16929 SAS No.:	:SDG	No.: ENS23
Matrix: (soil/water) <u>WATER</u>	Lab Sample ID:	VBLK 17
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID:	B1336
Level: (low/med) LOW	Date Received:	08/17/91
% Moisture: not dec.	Date Analyzed:	08/17/91 C: 1.0
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor	: 1.0
Soil Extract Volume: (ul)	Soil Aliquot Vo	olume:(ul)
	TRATION UNITS: or ug/Kg) <u>UG/L</u>	
CAS NUMBER   COMPOUND NAME	RT   EST.	

## VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: HYGIENIC LAB Contract: 68-D0-0154

Lab Code: IOWA Case No.: 16929 SAS No.: SDG No.: ENS23

Matrix: (soil/water) WATER

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID: B1337

Level: (low/med) LOW

Date Received: 08/19/91

% Moisture: not dec.

Date Analyzed: 08/19/91

Soil Aliquot Volume: \_\_\_\_(ul)

GC Column: DB-624 ID: 0.530 (mm)

Soil Extract Volume: (u1)

Dilution Factor: 1.0

Lab Sample ID: VBLK19

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

1		 		
ł	74-87-3Chloromethane	10		;
1	74-83-9Bromomethane	10	ł U	1
;	75-01-4Vinyl Chloride	10	١U	}
¦	75-00-3Chloroethane	10	١U	1
ŀ	75-09-2Methylene Chloride	1 2	IJ	=
ł	67-64-1Acetone	10	JU	i
;	75-15-0Carbon Disulfide	10	١U	:
;	75-35-41,1-Dichloroethene	10	١U	ļ
;	75-34-31,1-Dichloroethane	10	١U	;
ļ	540-59-01,2-Dichloroethene (total)	10	١U	;
¦	67-66-3Chloroform	10	ŧυ	;
ļ	107-06-21,2-Dichloroethane	! 10	!U	!
ļ	78-93-32-Butanone	10	; U	1
;	71-55-61,1,1-Trichloroethane	! 10	ΙU	}
;	56-23-5Carbon Tetrachloride	10	IU	}
ţ	75-27-4Bromodichloromethane	10	١U	1
!	78-87-51,2-Dichloropropane	10	IU	<b>;</b>
ŀ	10061-01-5cis-1,3-Dichloropropene	10	١U	1
i	79-01-6Trichloroethene	- 10	ΙU	!
ł	124-48-1Dibromochloromethane	10	١U	1
ŀ	79-00-51,1,2-Trichloroethane	10	١U	1
1	71-43-2Benzene	10	١U	-
ŀ	10061-02-6trans-1,3-Dichloropropene	10	ΙU	1
ļ	75-25-2Bromoform	10	ŀυ	1
ł	108-10-14-Methyl-2-Pentanone	10	١U	}
1	591-78-62-Hexanone 127-18-4Tetrachloroethene	. 10	١U	1
1	127-18-4Tetrachloroethene	10	١U	}
ļ	79-34-51, 1, 2, 2-Tetrachloroethane	10	١U	1
;	108-88-3Toluene	10	١U	!
!	108-90-7Chlorobenzene	. 10	١U	1
;	100-41-4Ethylbenzene	10	¦ U	}
1	100-42-5Styrene	10	ΙŪ	1
!	1330-20-7Xylene (total)	10	ΙŪ	}
ŀ	,, , ,		;	1

# 1E

	EPA	SAMPLI	E NO.	
; -				
ł	VBL	_K 19		

	ILE ORGANICS ANALYSIS TATIVELY IDENTIFIED (		EET				
Lab Name: <u>HYGIENI</u>	C LAB	Contract	: <u>68-D0-0</u>	154 154	VBLK 1	9 	
Lab Code: <u>IOWA</u>	Case No.: 16929	SAS No.	:	SDG	No.: EN	523	
Matrix: (soil/wate	er) <u>WATER</u>		Lab Samp	le ID;	VBLK 19		ځ
Sample wt/vol:	5.0 (g/mL) ML	_	Lab File	ID:	B1337	<del></del>	Ĭ,
Level: (low/med	d) LOW		Date Rece	eived:	08/19/	9 1	
% Moisture: not de	ec		Date Ana	lyzed:	08/19/	9 1	INSTR
GC Column: DB-624	ID: <u>0.530</u> (mm)		Dilution	Factor	: 1.0		-
Soil Extract Volum	me: (ui)		Soil Alio	quot Vo	lume:	(,u	11)
Number TICs found	d: <u>0</u>		FRATION UI or ug/Kg)		·.		
	COMPOUND NAM		RT	   EST.  ======	CONC.	   Q  =====	; ;
1	Ī	,	1	ı		t	1

## SAS

## **ORGANIC**

## GROUND WATER DATA

PAGE	1	0F	

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V

DATE:	
SUBJECT:	Review of Region V CLP Data Received for Review on
FROM:	Curtis Ross, Director (5SCRL) Central Regional Laboratory -
TO:	Data User:
	We have reviewed the data for the following case(s).  SITE NAME: Stern Rubber + Tool Co. SMO Case No. 16929/6339E  No. of D.U./Activity  Numbers
	SMO Traffic No. ERL 27-29, 93, ENS 05, 18-22  Hrs. Required
	CLP Laboratory: \( \tag{CV bed}\) for Review:
f 10	Following are our findings: The following union covers the analyses water samples for low level organics; due to laboratory of problems, samples EKL 29 and Ens 18 were marked - analyzed. Zefar to the validation Marative and ortheir for Die of the Control of the
Striner to be	- analyzed. 24 to the walter in which
forus	for Date Graifuis
( )	Data are acceptable for use.  Data are acceptable for use with qualifications referenced above.  See Data Qualifier sheets and Calibration Outlier forms for flags and additional comments.  Data are preliminary - pending verification by Contractor Laboratory.  See Case Summary above.  Data are unacceptable.
cc:	Carla Dempsey,CLP Quality Assurance Officer, Analytical Operations Branch James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

Case 16724 S- Cubed S-Em Rubbe = 7201

#### 1. HOLDING TIMES

Holding times for these Water samples for Volatiles exceeded the technical requirements of 14 days for acid-preserved samples; all results should be considered as "estimated" and are qualified with the letter "J".

#### 2. GC/MS TUNING

GC/MS Tuning criteria were met for these samples.

#### 3. CALIBRATION

Calibration outliers are noted on the outlier form.

#### 4. METHOD BLANKS

Volatiles Method Blanks contained low levels of the common laboratory contaminants acetone and methylene chloride; these compounds have been qualified as "U" - "not detected" in associated Investigative samples.

#### 5. SURROGATES

The Low Level Volatiles Surrogate Bromofluorobenzene was within required acceptance limits for all Investigative samples.

#### 6. MATRIX SPIKE/SPIKE DUPLICATE

MS/MSDs are not required on Low Level Organics analyses.

#### 7. INTERNAL STANDARDS

Internal Standards were within acceptable QC limits for all samples.

#### 8. LABORATORY CONTROL SAMPLE (LCS)

The LCS (designed to assess CLP laboratory methods capability) had a number of spike compounds with percentage recoveries greater than the maximum 140% recovery; however, due to the holding time violation and subsequent qualification of all Volatile sample results as estimated, no qualification of data has been made based on the LCS.

#### 10. CLP COMPOUND QUANTITATION AND IDENTIFICATION

Volatiles compounds reported in this sample group appear to have been correctly calculated and confirmed by library mass spectra, as per the Statement of Work.

#### 11. OTHER

Sample EKL 93 was identified from the Organic Traffic Report as the Trip Blank for this sample group; this sample contained the Target Compound Acetone at a concentration of 2.3 ug/L (estimated). Acetone was also detected

Case 16727 S- Whed

in one of the Volatiles Method Blanks at similar concentrations (1.9 ug/L), and it's presence in this QC sample is most likely attributable to the laboratory; Acetone in EKL 93 has been qualified as "U".

Sample EKL 27 was identified from the same Traffic Report as the Field Blank for this group; no Target Compounds were identified in this sample.

September 12,1991

Vol 1 DECENVEN

Narrative Case: 16929 SAS 6339E S-CUBED Contract No. 68D90027

US EPA CENTRAL REGIONAL LAB.
536 S. CLARK ST.
CHICAGO, ILLINOIS 60605

This case consists of the following samples reported under SDG: EKL27

EKL27 EKL93 ENS19 ENS22 EKL28 ENS05 ENS20 EKL29 ENS18 ENS21

PEM: VOA: PV735 LCS: VOA: VLCS01

Volatile analyses were carried out outside of holding times on a packed column due to severe instrument problems on the capillary column instrument. 25 ml purge volumes were used. The internal standard was bromochloromethane, thus this compound could not be targeted. 1,2 dibromoethane was not available for standardization, thus no data are reported for this compound. From the LCS data it appears that the dichlorobenzene calibration is inaccurate. Samples were clan.

Several modifications of the volatile protocol have been necessary to achieve the most accurate data. The quantitation mass of 4-bromofluorobenzene has been changed from m/e 95 to m/e 174 due to an interference in the calibration standards from 1,1,2,2 tetrachloroethane. Due to the significant contribution to m/e 150 from the unlabeled 1,4 dichlorobenzene, the quantitation mass of internal standard 1,4 dichlorobenzene d<sub>4</sub> has been changed to m/e 152.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Date:

JoAnn Wilkinson,

Project Manager

1 TUT 10 + United States Environmental Protection Agency Case Number SAS No. (if applicable) **Organic Traffic Report** Contract Laboratory Program Sample Management Office 6330F 16929 PO Box 818 Alexandria, VA 22313 (For CLP Use Only) 703-557-2490 FTS 557-2490 2. Region Number Sampling Co. Airbill Number 4. Date Shipped 1. Sample Description (Enter in Column A) 5. Date Received Received by 1.11. (17. 072693737 819191 1. Surface Water Sampler (Name) Carrier Unit Price Laboratory Contract Number TINCX Ju hicut Ground Water 3. Ship To: Leachate Triple volume required for matrix 6. Transfer to Date Received Rinsate Soft Change MINED spike/duplicate aqueous sample. Soil/Sediment Received by 6. Oil (SAS) Since Milly CA Ship medium and high concentration 1/2/21-11/15 7. Waste (SAS) samples in paint cans. 8. Other (SAS) (Specify) Contract Number Price Tille! I HAVE WHITEK See reverse for additional instructions: (I) High Conc. Phases (Check below) (C) (B) (D) (E) (F) (G) (H) : CLP Sample Concen-**RAS Analysis** Date/Time of Corresponding Sample Descriptration Special Wa- Non ter- Wa-Station Sample Sample CLP Inorganic tion ' Number I =low Pest/ ter-Handling Location Collection Condition VOA BNA Sample MIS MIS (From labels) (From M=med PCB on Receipt box 1) H=high Number Liq. Liq. LK193 TKII KUNK 19/e/11, 0830  $\overline{\lambda}$ 3/1/11, 1145 1KL27 MILLIAM TOPOKAT 8/1/11, 1700 1 KLZO 3F 8/E/11 8/4/11, 1210 1KL 29 MITTING. CNS05 5/6/9 kW-1 1355 8/11/11 1615 [NS.18 KW-Z MSIG KN-3 1445 1515 IN570 7 KW-11 11/2/13 tN521 KW-5 169 श्वाना UN522 2 KW-6 1775 le received for the SDG Jane PN 735 . ,

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

ASE/SAS	#	160	127	

ļ	Instrument # #0-4	Init	t. Ca	١	Con	t. Ca	al.						1.	Con	t. C	a١
ļ	DATE/TIME:	8/28	918	· U2_	0 214	(174	<u>r</u>	5/31					900			
1		RF	%RSD	*	RF '	%D	*	RF	%D	*	RF_	%D	*	RF	%0	ľ
- 1	Chloromethane															Τ
ĺ	Bromomethane										į					T
	Vinyl Chloride															Τ
	Chloroethane												-			T
į	Methylene Chloride	4.47	59.2	7	2,34	47.7	3	2.35	47.4	3	2.74	38.50	3			Τ
	Acetone		60.5													Ť
į	Carbon Disulfide							,,,,		<u> </u>						Ť
į	1,1-Dichloroethane															T
	1,1-Dichloroethene	-													$\Box$	T
al	Trans-1,2-Dichloroethene		,,,													T
į	Chloroform															T
j	2-Butanone	.124	68.8	5											1	T
1	1,2-Dichloroethane															Ī
İ	1,1,1-Trichloroethane							T								T
- 1	Carbon Tetrachloride								† — —							Ť
į	Vinyl Acetate							.140	31.95	3					1	T
į	Bromodichloromethane									Ť						Ť
ł	1,2-Dichloropropane							1								T
j	Trans-1,3-Dichloropropene		-												1	Ť
İ	Trichloroethene		-						<del>                                     </del>							T
	Dibromochloromethane										127	25.9	5		1	Ť
j	1,1,2-Trichloroethane						<u> </u>	1								Ť
İ	Benzene					<u> </u>			<u> </u>							T
İ	cis-1,3-Dichloropropene							<b></b>								Ť
- 1	2 6th for washy wing the there						Γ						-		T	Ť
İ	Bromoform	. 06	33.0	7	. 641	31.9	R	.03L	39.6	K	.037	38.5	2		$\top$	Ť
	4-Methyl-2-Pentanone						Ť		l l		<u> </u>					T
İ	2-Hexanone					Γ.										T
į	Tetrachloroethene															T
- [	1,1,2,2-Tetrachloroethane						Ī									T
ĺ	Toluene							<b> </b>								Ţ
į	Chlorobenzene		-				<u> </u>	1								1
İ	Ethylbenzene							<del>                                     </del>	1						1	T
j	Styrene .														T	1
tali	■-Xylene					l		T							T	T
4						T	T	†								T
ľ	12 Dibrono 3 Chrologogae	.006	39,2	R							-003	47.3	2	J		
'	Branefluadous	<u> </u>						<del>                                     </del>								_
	AFFECTED m - Dichlandsone															
	SAMPLES: 0 - Dicharoberrae						-	.089	55.0	7						_
	0 - Nichlandoren	ì ——						1								
	Reviewer's	Van			VAU	<u>i-1</u>		UR	W-2		UP	w -	<u> </u>			
	Initials/Date:	1	,		LC				<u> </u>			-735				
						- 05	-		<u></u>	<u> </u>	-					
					1	- 19		100								_
		1			, <b>t</b>	· l		I	7					<del></del>		
						- 20	`	EK	1 4	בים	ł			ł		

\* These flags should be applied to the analytes on the sample data sheets.

Sample Number \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* EKL27

CLIENT :

EPA REGION 5

PROJECT:

16929/SAS 6339E

SDG No.:

EKL27

Concentration Low Medium (Circle one)

Date Extracted/Prepared:

08-30-91

Lab File ID no: Sample Matrix:

ENS27

68-D9-0027

Date Analyzed:

Date Sample Received:

WATER

Percent Moisture:

N.A

Data Release Authorized By:

Contract:

08-09-91

Purge Volume:

25 (mL)

Dilution Factor:

i i						
CAS	S		(ug/1) er ug/kg	CAS		(ug/1 or ug/kg
: Nur	nber		(Circle One)	Number		(Circle One)_
174-	-87-3	CHLOROMETHANE	1 บ	J 78-87-5	1,2-DICHLOROPROPANE	10
† 74-	-83-9	BROMOMETHANE	1 U	1 10061-01-5	CIS-1,3-DICHLOROPROPENE	1 4
175-	-91-4	VINYL CHLORIDE	1 U	79-01-6	TRICHLOROETHENE	1,0
1 75-	-00-3	CHLOROETHANE	1 U	124-48-1	DIBROMOCHLOROMETHANE	.1 U
1 75-	-09-2	METHYLENE CHLORIDE	2 U	79-00-5	1,1,2-TRICHLOROETHANE	1 U
67-	64-1	ACETONE	5 U	71-43-2	BENZENE	1 U
1 75-	-15-0	CARBON DISULFIDE	1 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	1 U
175-	-35-4	1.1-DICHLOROETHENE	1 U	75-25-2	BROMOFORM	1 R
1 75-	-34-3	1,1-DICHLOROETHANE	1 U	108-10-1	4-METHYL-2-PENTANONE	5 U
540	-59-0	1,2-DICHLOROETHENE (TOTAL)	ט 1	591-78-6	2-HEXANONE	. 5 U
1 67-	-66-3	CHLOROFORM	1 U	127-18-4	TETRACHLOROETHENE	1 U
1 107	-06-2	1,2-DICHLOROETHANE	- 1 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	1 U
1 78-	93-3	2-BUTANONE	5 บ	108-88-3	TOLUENE	1 U
: 71-	55-6	1.1.1-TRICHLOROETHANE	1 0	108-90-7	CHLOROBENZENE	1 U
1 56-	23-5	CARBON TETRACHLORIDE	1 U	100-41-4	ETHYLBENZENE	1 U
108	1-05-4	VINYL ACETATE	1 U	100-42-5	STYRENE	1 U \
1 75-	27-4	BROMODICHLOROMETHANE	1 U	1330-20-7	XYLENE (TOTAL)	1 U
96-	12-8	1,2-DIBROMO-3-CHLOROPROPANE	, עו	106-46-7	P-DICHLOROBENZENE	1 0
541	1-73-1	M-DICHLOROBENZENE	1 v 🔌	₹ 95-50-1	O-DICHLOROBENZENE	1 U 🔏

Environmental Protection Agency. CLP Sample Management Office. P. O. Box 818, Alexandria, Virginia 22313 703/587-2480

Sample Number EKL 27

### Organics Analysis Data Sheet (Page 4)

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration [ug/l or ug/kg]
1.	VAXACMAN	V0,4	4,32	O. G. JN
2.	~		5,64	113JN
3.	UNXNOWN CEH12	11	12,46	4,051
6.				
7.				
8. 9.				
10			·	
12				
14				
6				
7		_		
•				
1				
2 3				
4				
5 6				
7				
8 9				
مـــــــــــــــــــــــــــــــــــــ			<u>.</u> 1_	<u> </u>

Sample Number \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* EKL28

CLIENT :

EPA REGION 5

PROJECT:

16929/SAS 6339E

SDG No.:

EKL27

Concentration: Low Medium (Circle one)

Date Extracted/Prepared:

08-30-91

Lab File ID no: Sample Matrix:

ENS28

68-09-0027

Date Analyzed: pH:

N.A

Date Sample Received:

WATER 08-09-91

Percent Moisture:

N.A

Data Release Authorized By:

Contract:

Purge Volume:

25 (mL)

Dilution Factor:

i				·	
i	CAS		(ug/Dor ug/kg	CAS	ug/lor ug/kg
į	Number		(Circle One)	Number	(Circle One)
i	74-87-3	CHLOROMETHANE	10 5	78-87-5 1,2-DICHLOROPROPANE	10 5
i	74-83-9	BROMOMETHANE	1 U \	10061-01-5 CIS-1,3-DICHLOROPROPENE	1 U
i	75-01-4	VINYL CHLORIDE	1 U \	79-01-6 TRICHLOROETHENE	1 U
i	75-00-3	CHLOROETHANE	ן ט ו	124-48-1 DIBROMOCHLOROMETHANE	1 U
ì	75-09-2	METHYLENE CHLORIDE	2 U	79-00-5 1,1,2-TRICHLOROETHANE	1 U
i	67-64-1	ACETONE	5 U	71-43-2 BENZENE	1 U /
i	75-15-0	CARBON DISULFIDE	ן ע 1	10061-02-6 TRANS-1,3-DICHLOROPROPENE	1 U /
į	75-35-4	1.1-DICHLOROETHENE	1 U	75-25-2 BROMOFORM	1 <b>K</b> /
i	75-34-3	1.1-DICHLOROETHANE	1 U	108-10-1 4-METHYL-2-PENTANONE	5 U (
į	540-59-0	1.2-DICHLOROETHENE (TOTAL)	1 U	591-78-6 2-HEXANONE	5 U
i	67-66-3	CHLOROFORM	1 U	127-18-4 TETRACHLOROETHENE	1 U
i	107-06-2	1,2-DICHLOROETHANE	1 U	79-34-5 1,1,2,2-TETRACHLOROETHANE	1 U
i	78-93-3	2-BUTANONE	5 U /	108-88-3 TOLUENE	1 U
ŀ	71-55-6	1,1,1-TRICHLOROETHANE	1 U ∫	108-90-7 CHLOROBENZENE	1 U
i i	56-23-5	CARBON TETRACHLORIDE	1 U /	100-41-4 ETHYLBENZENE	1 U
i	108-05-4	-VINYL ACETATE	1 ∪ ∫	100-42-5 STYRENE	1 U
1	75-27-4	BROMODICHLOROMETHANE	1 U	1330-20-7 XYLENE (TOTAL)	1 U
į	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1 ∪ \	106-46-7 P-DICHLOROSENZENE	1 U 认
į	541-73-1	M-DICHLOROBENZENE	1 U 124	95-50-1 O-DICHLOROBENZENE	1 U 🗸
1					•
į					

Sample Number EKL28

## Organics Analysis Data Sheet (Page 4)

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (lug/l or ug/kg
1	No Ac's FOUND.	VOA-		
2		<del></del>		<del></del>
4.				
6				
•				
7.				
•				
10			<u> </u>	
11				
13				
14				`
16				
17				
18				
20				· · · · · · · · · · · · · · · · · · ·
11				
2		———————————————————————————————————————		
4		<del></del>		
5				
6	·			
8				
9				
0				

\* \* Sample Number \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* EKL93 \* \* EPA REGION 5 68-D9-0027 CLIENT : Contract: 16929/SAS 6339E PROJECT: EKL27 SDG No.: Concentration: Low Medium (Circle one) Date Extracted/Prepared: Lab file ID no: ENS93 Date Analyzed: Sample Matrix: WATER 08-30-91 Date Sample Received: 08-09-91 N.A Data Release Authorized By: Percent Moisture: N.A

Dilution Factor:

25 (mL)

Purge Volume:

i	CAS		ug/l or ug/kg	CAS	ug/For ug/kg
	Number		(Circle One)	-Number	(Circle One)
	74-87-3	CHLOROMETHANE	1 0 2	78-87-5 1,2-DICHLOROPROPANE	1 1 5
	74-83-9	BROMOMETHANE	1 u \	10061-01-5 CIS-1,3-DICHLOROPROPENE	1 0 \
•	75-01-4	VINYL CHLORIDE	1 0	79-01-6 TRICHLOROETHENE	1 U
	75-00-3	CHLOROETHANE.	1 11	124-48-1 DIBROMOCHLOROMETHANE	1 0
•	75-09-2	METHYLENE CHLORIDE	2 U	79-00-5 1,1,2-TRICHLOROETHANE	1 U
-	67-64-1	ACETONE •	2.3 1/0	71-43-2 BENZENE	1. u
	75-15-0	CARBON DISULFIDE.	1 11	10061-02-6 TRANS-1,3-DICHLOROPROPENE	1 0
•	75-35-4	1,1-DICHLOROETHENE	iu	75-25-2 BROMOFORM	iR
-	75-34-3	1.1-DICHLOROETHANE	1 0	108-10-1 4-METHYL-2-PENTANONE	5 U.
	540-59-0	1,2-DICHLOROETHENE (TOTAL)	1 11	591-78-6 2-HEXANONE	5 U
	67-66-3	CHLOROFORM	1 U	127-18-4 TETRACHLOROETHENE	1 U
•	107-06-2	1,2-DICHLOROETHANE	1 U	79-34-5 1,1,2,2-TETRACHLOROETHANE	1 U
	78-93-3	2-BUTANONE	5 U	108-88-3 TOLUENE	10
	71-55-6	1,1,1-TRICHLOROETHANE	1 0	108-90-7 CHLOROBENZENE	1 U
	56-23-5	CARBON TETRACHLORIDE	1 U	100-41-4 ETHYLBENZENE	1 0
•	108-05-4	VINYL ACETATE	1 U	100-42-5 STYRENE	1 U
i	75-27-4	BROMODICHLOROMETHANE	1 U	1330-20-7 XYLENE (TOTAL)	1 U
-	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1 U	106-46-7 P-DICHLOROBENZENE	1 U
•	541-73-1	M-DICHLOROBENZENE	1 0	95-50-1 O-DICHLOROBENZENE	1 v .\
i			A		
į			·		•

10/22/91

Environmental Protection Agency. CLP Sample Management Office. P. O. Box 818, Alexandrie, Virginie 22313 703/587-2480

Sample Number EKL93

### Organics Analysis Data Sheet (Page 4)

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/I or ug/kg)
1	No TC'S FOUND.	VOA-		
2			<del> </del>	<b> </b>
3	·····		ļ <u>.</u>	ļ
4			<del> </del>	
5				<del></del>
7				
10			· · · · · · · · · · · · · · · · · · ·	
11				<del>-</del>
12				
13				
14				
16				
16 17				
18				
19				
20				
21				
22				
23				
24				
25	· · · · · · · · · · · · · · · · · · ·			
26		<del></del>		
27	······································			
!8 !9			<del></del>	
10				

Sample Number S-CUBED \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* ENSO5 -\* \*

CLIENT :

EPA REGION 5

PROJECT:

16929/SAS 6339E

SDG No.:

EKL27

Concentration Low Medium (Circle one)

Date Extracted/Prepared:

N.A

Date Analyzed:

08-30-91

pH:

N.A

Percent Moisture:

N.A

Purge Volume:

25 (mL)

Lab File 10 no:

ENS05

· 68-D9-0027

Sample Matrix:

WATER 08-09-91

Date Sample Received: Data Release Authorized By:

Contract:

Dilution Factor:

		•			
CAS		ug/ior ug/kg	CAS		(ug/i or ug/kg
Number		(Circle One)	Number		(Circle One)
1 74-87-	3 CHEOROMETHANE	105	78-87-5	1,2-DICHLOROPROPANE	10 3
74-83-	9 BROMOMETHANE	1 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	. 10 ,
1 75-01-	4 VINYL CHLORIDE	10 \	79-01-6	TRICHLOROETHENE	1 U
1 75-00-	3 CHLOROETHANE	1 U	124-48-1	DIBROMOCHLOROMETHANE	1 U
175-09-	2 METHYLENE CHLORIDE	2 U	79-00-5	1,1,2-TRICHLOROETHANE	1 U
67-64-	1 ACETONE	5 U	71-43-2	BENZENE	1 U
1 75-15-	O CARBON DISULFIDE	ט 1	10061-02-6	TRANS-1,3-DICHLOROPROPENE	1 U_
175-35-	4 1,1-DICHLORGETHENE	1 U	75-25-2	BROMOFORM	1 R \
175-34-	3 1.1-DICHLOROETHANE	1 U	198-10-1	4-METHYL-2-PENTANONE	5 ป
1 540-59	-0 1,2-DICHLOROETHENE (TOTAL)	· 1 U	591-78-6	2-HEXANONE	5 U
67-66-	3 CHLOROFORM	1 U	127-18-4	TETRACHLOROETHENS	1 U
107-06	-2 1.2-DICHLOROETHANE	1 ช	79-34-5	1,1,2,2-TETRACHLOROETHANE	1 U
1 78-93-	3 2-BUTANONE	5 U	108-88-3	TOLUENE	1 U
1 71-55-	6 1,1,1-TRICHLOROETHANE	1 ช 🚶	108-90-7	CHLOROBENZENE	1 U
56-23-	5 CARBON TETRACHLORIDE	1 0	100-41-4	ETHYLBENZENE	1 U
108-05	-4 VINYL ACETATE	1 U	100-42-5	STYRENE	1 U
1 75-27-4	4 BROMODICHLOROMETHANE	1 0	1330-20-7	XYLENE (TOTAL)	1 U
96-12-1	1,2-DIBROMO-3-CHLOROPROPANE	1 U	106-46-7	P-DICHLOROBENZENE	1 U . \ _
541-73	-1 M-DICHLOROBENZENE	10	95-50-1	O-DICHLOROBENZENE	1 0
1					

Environmental Protection Agency. CLP Sample Management Office. P. O. Box 818, Alexandria, Virginia 22313-703/557-2490

Sample Number ENSOS

### Organics Analysis Data Sheet (Page 4)

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration [ug/l or ug/kg
1	No TC'S FOUND.	VOA-		
2			<del> </del>	
3			<del> </del>	
4.				
0.				
7.				
\$	<del></del>			
9.				
10				
12				
13				
14				
16		<del>-</del>		
16				
18				
19				
20	·			
21	<del></del>			
22			·	
23				
25				
26				
28				
29		<del></del>		

: Sample Number : \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* ENS19 

CLIENT : PROJECT: EPA REGION 5 16929/SAS 6339E

SDG No.:

EKL27

Concentration: (Low ) Medium (Circle one)

Date Extracted/Prepared:

Date Analyzed:

08-30-91

N.A N.A

Percent Moisture:

Purge Volume:

25 (mL)

Lab File ID no:

68-D9-0027

Sample Matrix:

WATER

Date Sample Received: 08-09-91 Data Release Authorized By:

Dilution Factor:

Contract:

1						
i	CAS		(ug/1)or ug/kg	CAS		(ug/1 or ug/kg
i	Number		(Circle One)	Number	• .	(Circle One)
i	74-87-3	CHLOROMETHANE	ر ۱۷	78-87-5	1,2-DICHLOROPROPANE	ر ۱۱
į	74-83-9	BROMOMETHANE	1 U 1	10061-01-5	CIS-1,3-DICHLOROPROPENE	1 U ,
i	75-01-4	VINYL CHLORIDE	1 ሀ 🚺	79-01-6	TRICHLOROETHENE	1 U
i	75-00-3	CHLOROETHANE	1 U	124-48-1	DIBROMOCHLOROMETHANE	ו"ט"
ì	75-09-2	METHYLENE CHLORIDE	2 ∪ \	79-00-5	1,1,2-TRICHLOROETHANE	1 U
1	67-64-1	ACETONE	5 U	71-43-2	BENZENE	1 U
ł	75-15-0	CARBON DISULFIDE	1 0	10061-02-6	TRANS-1,3-DICHLOROPROPENE	1 U
ì	75-35-4	1.1-DICHLOROETHENE	1 U	75-25-2	BROMOFORM	1 (2)
i	75-34-3	1.1-DICHLOROETHANE	1 U	108-10-1	4-METHYL-2-PENTANONE	5 U
i	540-59-0	1,2-DICHLOROETHENE (TOTAL)	1 U	591-78-6	2-HEXANONE	5 U
į	67-66-3	CHLOROFORM	1 U /	127-18-4	TETRACHLOROETHENS	. 10
i	107-06-2	1,2-DICHLOROETHANE	- 10	79-34-5	1,1,2,2-TETRACHLOROETHANE	1 U \
į	78-93-3	2-BUTANONE	5 U	108-88-3	TOLUENE	1 U
i	71-55-6	1,1,1-TRICHLOROETHANE	1 U	108-90-7	CHLOROBENZENE	1 U \
į	56-23-5	CARBON TETRACHLORIDE	1 U	100-41-4	ETHYLBENZENE	1 U
İ	108-05-4	VINYL ACETATE	1 U	100-42-5	STYRENE	1 U
i	75-27-4	BROMODICHLOROMETHANE	1 U	1330-20-7	XYLENE (TOTAL)	1 U
İ	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	10,	106-46-7	P-DICHLOROBENZENE	10 1
	541-73-1	M-DICHLOROBENZENE	1 U V	95-50-1	O-DICHLOROBENZENE	1 u V)

Sample Number ENS19

## Organics Analysis Data Sheet (Page 4)

CAS Number	Compound Name	Fraction	AT or 3can Aumbor	Estimated Concentration (ug/l or ug/kg)
1	No TC'S FOUND.	VOA		
2			<u> </u>	
3				
4				
S			ļ	
8			<b> </b>	
7				
8	·			
9.				
10.				
11				
12.				
13.				
14				
16				
17				
18				
19				
20.				
21				
22				
23				
24				
25				
16				
27				
28				
.9				
ю				

S-CUBED Sample Number \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* ENS20

CLIENT :

EPA REGION 5

PROJECT:

16929/SAS 6339E

SDG No.: EKL27

Concentration Low Medium (Circle one)
Date Extracted/Prepared: N.A

Date Analyzed:

Percent Moisture:

08-30-91

N.A N.A

Purge Volume:

25 (mL)

Lab File ID no:

Sample Matrix:

WATER 08-09-91

Date Sample Received: Data Release Authorized By:

Contract:

ENS20

Dilution Factor:

68-09-0027

i i		•				
1	CAS	•	ug/1 or ug/kg	CAS		ug/l or ug/kg
	Number		<u> </u>	-Number		(Circle One)
i	74-87-3	CHLOROMETHANE	100	78-87-5	1,2-DICHLOROPROPANE	1 4 5
i	74-83-9	BROMOMETHANE	1 U \	10061-01-5	CIS-1,3-DICHLOROPROPENE	١٧,
į	75-01-4	VINYL CHLORIDE	1 U	79-01-6	TRICHLOROETHENE	1_U
i	75-00-3	CHLOROETHANE	1 U	124-48-1	DIBROMOCHLOROMETHANE	.1 U
i	75-09-2	METHYLENE CHLORIDE	2 U	79-00-5	1,1,2-TRICHLOROETHANE	1 U
į	67-64-1	ACETONE .	2.2 JB-V	71-43-2	BENZENE	1 U
i	75-15-0	CARBON DISULFIDE	1 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	1 0
i	75-35-4	1.1-DICHLORGETHENE	1 U	75-25-2	BROMOFORM	1 R
į	75-34-3	1,1-DICHLOROETHANE	1 U	108-10-1	4-METHYL-2-PENTANONE	5 U
į	540-59-0	1,2-DICHLORGETHENE (TOTAL)	1 U	591-78-6	2-HEXANONE	5 U
į	67-66-3	CHLOROFORM	1 U	127-18-4	TETRACHLOROETHENE	1 U
į	107-06-2	1,2-DICHLOROETHANE	- 1 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	1 U
į	78-93-3	2-BUTANONE	5 U	108-88-3	TOLUENE	1 U
ł	71-55-6	1,1,1-TRICHLOROETHANE	1 U	108-90-7	CHLOROBENZENE	1 U
į	56-23-5	CARBON TETRACHLORIDE	1 U	100-41-4	ETHYLBENZENE	1 U
i	108-05-4	VINYL ACETATE	1 U	100-42-5	STYRENE	1 U
i	75-27-4	BROMODICHLOROMETHANE	1 U	1330-20-7	XYLENE (TOTAL)	1 U
i	96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1 0	106-46-7	P-D1CHLOROBENZENE	1 U
i	541-73-1	M-DICHLOROBENZENE	1 U 💩	95-50-1	O-DICHLOROBENZENE	10
ļ		•	•			`
i						•
•					•	

Invironmental Protection Agency. CLP Sample Management Office, P. O. Box 318, Alexandrie, Virginia 22313 703/587-2490

Bampla Number ENSえの

### Organics Analysis Data Sheet (Page 4)

CAS . Number	Compound Name	Fraction	AT or Scan	Estimated Concentration (ug/l or ug/kg)
1	No Ac's Avens.	VOA-		
2			<u> </u>	
4.				
B				
0.				
7 8				
9				
10			· ·	
11				
13				
14.				
16	<u> </u>			
17				
18				
19				
21				
22				
23		-		
25				
26		1		
27				
29				
30				

S-CUBED Sample Number \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* ENS21

CLIENT :

EPA REGION 5

PROJECT:

16929/SAS 6339E

SDG No.:

EKL27

Concentration Low Medium (Circle one)
Date Extracted/Prepared: N.A

08-30-91

Date Analyzed:

Percent Moisture:

Purge Volume:

25 (mL) Lab File ID no:

ENS21

\_ 68-D9-0027

Sample Matrix:

WATER

Date Sample Received:

Contract:

08-09-91

Data Release Authorized By:

M

Dilution Factor:

1		_		_
CAS	•	ug/jor ug/kg	CAS	ug/1 or ug/kg
Number		(Circle One)	Number	(Circle One)
74-87-3	CHLOROMETHANE	105	78-87-5 1,2-DICHLOROPROPANE	10 5
174-83-9	BROMOMETHANE	1 U	10061-01-5 CIS-1.3-DICHLOROPROPENE	10
75-01-4	VINYL CHLORIDE	10,	79-01-6 TRICHLOROETHENE	1 U
75-00-3	CHLOROETHANE	1 U	124-48-1 DIBROMOCHLOROMETHANE	ָן ט"ו,
75-09-2	METHYLENE CHLORIDE	2 U	79-00-5 1,1,2-TRICHLOROETHANE	1 0
67-64-1	ACETONE	5 U	71-43-2 BENZENE	1 U
75-15-0	CARBON DISULFIDE	1 U	10061-02-6 TRANS-1,3-DICHLOROPROPENE	1 U /
75-35-4	1.1-DICHLOROETHENE	1 U	75-25-2 BROMOFORM	1 18
75-34-3	1,1-DICHLOROETHANE	1 U	108-10-1 4-METHYL-2-PENTANONE	5 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	. 10	591-78-6 2-HEXANONE	5 U /
67-66-3	CHLOROFORM	1 U	127-18-4 TETRACHLOROETHENE	1 U /
107-06-2	1,2-DICHLORGE THANE	1 U	79-34-5 1,1,2,2-TETRACHLOROETHANE	1 U
78-93-3	2-BUTANONE	5 U	108-88-3 TOLUENE	1 U
71-55-6	1,1,1-TRICHLOROETHANE	1 U	108-90-7 CHLOROBENZENE	1 U
56-23-5	CARBON TETRACHLORIDE	1 U	100-41-4 ETHYLBENZENE	1 0
108-05-4	VINYL ACETATE	1 U	100-42-5 STYRENE	1 U
75-27-4	BROMODICHLOROMETHANE	ט 1	1330-20-7 XYLENE (TOTAL)	1 U
96-12-8	1.2-DIBROMO-3-CHLOROPROPANE	. 10	106-46-7 P-DICHLOROBENZENE	1 U
541-73-1	M-DICHLOROBENZENE	10	95-50-1 O-DICHLOROBENZENE	1 U 🖠
i i		٧.		1

Sample Number CVS21

#### Organics Analysis Data Sheet (Page 4)

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1	No Ac's Found.	VOA-		
2				
4.				
5.				
7.				
9.			<u></u>	
10				······································
11				
13				
14				
16				
17				
19				
20				
2223	·			
24.				
26				
27				
28				
ю				

\* \* S-CUSED Sample Number \* LOW CONG. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* ENS22 \* \*

CLIENT :

EPA REGION 5

PROJECT:

16929/SAS 6339E

SDG No.:

EKL27

Concentration (Low) Medium (Circle one)

Date Extracted Prepared:

N.A

Date Analyzed:

08-30-91

N.A

Purge Volume:

Percent Moisture:

25 (mL') Lab File 10 no:

Sample Matrix:

ENS22

WATER

68-09-0027

Date Sample Received:

08-09-91

Data Release Authorized By:

Dilution Factor:

Contract:

CAS		ug/Tor ug/kg	CAS		ug/i)or ug/kg
Number		(Circle One)	- Number		(Circle One)
74-87-3	CHLOROMETHANE	1 U 🔾	78-87-5	1,2-DICHLOROPROPANE	1 U _
74-83-9	BROMOMETHANE	1 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	1 U
75-01-4	VINYL CHLORIDE	1 U	79-01-6	TRICHLOROETHENE	1 U
75-00-3	CHLOROETHANE	1 U	124-48-1	DIBROMOCHLOROMETHANE	1"U
75-09-2	METHYLENE CHLORIDE	2 U	79-00-5	1,1,2-TRICHLOROETHANE	-11 U
67-64-1	ACETONE	5 U	71-43-2	BENZENE	1 บ
75-15-0	CARBON DISULFIDE	1 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	ן נו
75-35-4	1.1-DICHLOROETHENE	1 U	75-25-2	BROMOFORM	1 R
75-34-3	1,1-DICHLOROETHANE	1 U	108-10-1	4-METHYL-2-PENTANONE	5 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	1 U	591-78-6	2-HEXANONE	5 U
67-66-3	CHLOROFORM	1 U	127-18-4	TETRACHLOROETHENE	1 U
107-06-2	1,2-DICHLOROETHANE	1 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	1 U
78-93-3	2-BUTANONE	5 U	108-88-3	TOLUENE	1 U
71-55-6	1,1,1-TRICHLORGETHANE	1 U	108-90-7	CHLOROBENZENE	1 U
56-23-5	CARBON TETRACHLORIDE	1 U	100-41-4	ETHYLBENZENE	· 1 U
108-05-4	VINYL ACETATE	1 U	100-42-5	STYRENE	1 U
75-27-4	BROMODICHLOROMETHANE	1 U	1330-20-7	XYLENE (TOTAL)	1 0
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE		106-46-7	P-DICHLOROBENZENE	1 U
541-73-1	M-DICHLOROBENZENE	1 U	95-50-1	O-DICHLOROBENZENE	1 0

Sample Number ENS 22

### Organics Analysis Data Sheet (Page 4)

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (lug/l or ug/kg)
1.	NO TC'S FOUND.	VOA-		
3.				
4				
•				
7.				
9.				
10				- <del></del>
12				
14				
16				
18				
19				
20				
23				
4				
5				
7				
9				
o			<u>.</u>	

CLIENT :

EPA REGION 5

PROJECT:

16929/SAS 6339E

SDG No.:

EKL27

Concentration: Low Medium (Circle one)

Date Extracted/Prepared:

N.A

Date Analyzed:

08-30-91

pH:

N.A

Percent Moisture:

N.A

Purge Volume:

25 (mL)

Lab File ID no:

VBG30

68-09-0027

Sample Matrix:

WATER

Date Sample Received: Data Release Authorized By:

Contract:

N.R

Dilution Factor:

MI

CAS		ug/lor u		CAS		ug/low ug/	
Number		(Circle 0	ne)	Number		(Circle One	
14-87-3	CHLOROMETHANE	1	U	78-87-5	1,2-DICHLOROPROPANE	1 U	
74-83-9	BROMOMETHANE	1	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	1 U	
75-01-4	VINYL CHLORIDE	1	U	79-01-6	TRICHLOROETHENE	1_U	
175-00-3	CHLOROETHANE	1	U	124-48-1	DIBROMOCHLOROMETHANE	,1 "U	
75-09-2	METHYLENE CHLORIDE	2	U	79-00-5	1,1,2-TRICHLOROETHANE	'1 U	
67-64-1	ACETONE	1.9	J	71-43-2	BENZENE	1 U	
75-15-0	CARBON DISULFIDE	1	ប	10061-02-6	TRANS-1,3-DICHLOROPROPENE	1 U	
75-35-4	1,1-DICHLORGETHENE	1	U	75-25-2	BROMOFORM	1 U	
75-34-3	1,1-DICHLOROETHANE	1	U	108-10-1	4-METHYL-2-PENTANONE	5 U	
540-59-0	1,2-DICHLOROETHENE (TOTAL)	1 1	U	591-78-6	2-HEXANONE	5 U	
67-66-3	CHLOROFORM	1	U	127-18-4	TETRACHLOROETHENE	ט 1	
107-06-2	1,2-DICHLOROETHANE	- 1	ប	79-34-5	1,1,2,2-TETRACHLOROETHANE	1 U	
78-93-3	2-BUTANONE	5	Ü	108-88-3	TOLUENE	1 U	
71-55-6	1,1,1-TRICHLOROETHANE	1	U	108-90-7	CHLOROBENZENE	์ 1 บ	
56-23-5	CARBON TETRACHLORIDE	1	U	100-41-4	ETHYLBENZENE	1 0	
108-05-4	VINYL ACETATE	1 1	U	100-42-5	STYRENE	1 U	
75-27-4	BROMODICHLOROMETHANE	1	U	1330-20-7	XYLENE (TOTAL)	1 U	
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	U	106-46-7	P-DICHLOROBENZENE	1 U	
541-73-1	M-DICHLOROBENZENE	1	U	95-50-1	O-DICHLOROBENZENE	N 1 U	

Sample Number VBW 2535-1

### Organics Analysis Data Sheet (Page 4)

GAS Number	Compound Name	Fraction	RT of Scan Number	Estimated Concentration (ug/l or ug/kg
1	No Te's Found.	VOA		
2.				
3				
4		ļ	<b></b>	·
5		<b></b>	<b> </b>	
6		ļ	<b> </b>	
7				
B		<b> </b>		
•		<b></b>		
10			<del> </del>	
11		<del> </del>		· · · · · · · · · · · · · · · · · · ·
13.				<del></del>
14.				
16.				· · · · · · · · · · · · · · · · · · ·
16				
17				
16				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29			<del></del>	

Sample Number VBW2535-2 \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* 

CLIENT :

EPA REGION 5 16929/SAS 6339E

PROJECT: SDG No.:

EKL27

Concentration: Low Medium (Circle one)

Date Extracted/Prepared:

Date Analyzed:

08-30-91

DH:

Percent Moisture: Purge Volume:

Contract:

· 68-D9-0027

Lab File ID no:

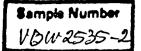
ABG30

Sample Matrix: Date Sample Received: WATER

Data Release Authorized By:

Dilution Factor:

CAS		ug/i or i	ua/ki	<b>a</b>	CAS		ug/Dor ug/kg
Number		(Circle			Number		(Circle One)
74-87-3	CHLOROMETHANE	-	U		78-87-5	1,2-DICHLOROPROPANE	1 U
74-83-9	BROMOMETHANE	1	IJ		10061-01-5	CIS-1,3-DICHLOROPROPENE	1 ช
75-01-4	VINYL CHLORIDE	1	U		79-01-6	TRICHLOROETHENE	1 0
75-00-3	CHLOROETHANE	1	U		124-48-1	DIBROMOCHLOROMETHANE	,1″u
75-09-2	METHYLENE CHLORIDE	2	U		79-00-5	1,1,2-TRICHLOROETHANE	11 U
67-64-1	ACETONE	5	U		71-43-2	BENZENE	1 U
75-15-0	CARBON DISULFIDE	1	U		10061-02-6	TRANS-1,3-DICHLOROPROPENE	1 ป
75-35-4	1,1-DICHLOROETHEME	1	IJ		75-25-2	BROMOFORM	1 U
75-34-3	1.1-DICHLOROETHANE	1	U		108-10-1	4-METHYL-2-PENTANONE	5 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	1	U		591-78-6	2-HEXANONE	5 บ
67-66-3	CHLOROFORM	1	U		127-18-4	TETRACHLOROETHENE	1 0
107-06-2	1.2-DICHLOROETHANE	1	U		79-34-5	1,1,2,2-TETRACHLOROETHANE	1 U
78-93-3	2-BUTANONE	5	Ü		108-88-3	TOLUENE	1 0
71-55-6	1.1.1-TRICHLOROETHANE	1	IJ		108-90-7	CHLOROBENZENE	1 U
56-23-5	CARBON TETRACHLORIDE	1	U		100-41-4	ETHYLBENZENE	1 U
108-05-4	VINYL ACETATE	1	U		100-42-5	STYRENE	1 U
75-27-4	BROMODICHLOROMETHANE	1	U		1330-20-7	XYLENE (TOTAL)	1 U
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	U		106-46-7	P-DICHLOROBENZENE	1 U
541-73-1	M-DICHLOROBENZENE	1	U		95-50-1	O-DICHLOROBENZENE	<u>, w ( 10 m</u>



### Organics Analysis Data Sheet (Page 4)

CAS Number	Compound Name	Fraction	RT or Scan Humber	Estimated Concentration (ug/I or ug/kg
1.	No Tc's Found.	VOA-		
2				
3				
4			ļ :	
S			ļ	
6			<b> </b>	[
7				
•. ——————				
9				
10		<del></del>		<del></del>
11				
12				
13				
14				
16				
16				<del></del>
18			<del></del>	
19				·
20				
21	•			
22				
23				4
4.		···	1 - 4 - 1 - 1	
25				
26				
17	والمعروب والمراكن والمناور والمراوي والمراوي والمراوي والمراور والمراور والمراور والمراور والمراور والمراور		a 12	
28				
9				
ю		1		

Sample Number \* LOW CONC. WATER VOLATILE ORGANICS ANALYSIS DATA SHEET \* V8W2535-3

CLIENT : PROJECT: EPA REGION 5 16929/SAS 6339E

SDG No.:

EKL27

Concentration: Low Medium (Circle one)
Date Extracted/Prepared: N.A

08-31-91

Date Analyzed:

Percent Moisture:

Purge Volume:

Lab File ID no:

68-09-0027

Sample Matrix:

WATER

Date Sample Received: Data Release Authorized By:

Contract:

Dilution Factor:

CAS		ug/1 or ug/kg	CAS		(ug/jer ug/kg
Number		(Circle One)	Number		(Circle One)
74-87-3	CHLOROMETHANE	1 U	78-87-5	1,2-DICHLOROPROPANE	1 0
74-83-9	BROMOMETHANE	1 11		CIS-1,3-DICHLOROPROPENE	1 U
75-01-4	VINYL CHLORIDE	1 0	79-01-6	TRICHLOROETHENE	1 U
75-00-3	CHLOROETHANE	1 U	124-48-1	DIBROHOCHLOROMETHANE	,1"u
175-09-2	METHYLENE CHLORIDE	3.2 -	79-00-5	1,1,2-TRICHLOROETHANE	<sup>2</sup> 1 U
67-64-1	ACETONE	5 บ	71-43-2	BENZENE	1 U
75-15-0	CARBON DISULFIDE	1 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	1 U
75-35-4	1,1-DICHLOROETHENE	1 U	75-25-2	BROMOFORM	1 U
175-34-3	1,1-DICHLOROETHANE	1 ប	108-10-1	4-METHYL-2-PENTANONE	5 U
540-59-0	1,2-DICHLOROETHENE (TOTAL)	1 U	591-78-6	2-HEXANONE	5 U
67-66-3	CHLOROFORM	1 U	127-18-4	TETRACHLOROETHENE	1 U
107-06-2	1,2-DICHLOROETHANE	1 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	1 ប
18-93-3	2-BUTANONE	- 5 บ	108-88-3	TOLUENE	1 U
71-55-6	1,1,1-TRICHLOROETHANE	1 U	108-90-7	CHLOROBENZENE	1 U
56-23-5	CARBON TETRACHLORIDE	1 U	100-41-4	ETHYLBENZENE	1 U
108-05-4	VINYL ACETATE	. 1 U	100-42-5	STYRENE	1 U
15-27-4	BROMODICHLOROMETHANE	1 บ	1330-20-7	XYLENE (TOTAL)	1 U
96-12-8	1.2-DIBROMO-3-CHLOROPROPANE	1 U	106-46-7	P-DICHLOROBENZENE	-1 U
1 541-73-1	M-DICHLOROBENZENE	1 U	95-50-1	O-DICHLOROBENZENE	and the state of t

Sample Number VBW2535-3

## Organics Analysis Data Sheet (Page 4)

### Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (lug/l br ug/kg
1	No Ac's Found.	VOA-	·.	
2				
3			<b></b>	
4			<b>}</b>	
5			<del> </del>	
•. ————			<b> </b>	
7				<del></del>
•				
•				
10				
12				
13				
14				
18				
16				
17				
18				·
19				
20				<del></del>
21				·
22				
23				<del></del>
4				
8				
7				
8.				
9.				
0				

# RAS

# **ORGANIC**

# SEDIMENT DATA

DΛ	GE	1	0F	
ra	שב	1	Ur	

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V

DATE	
SUBJECT:	Review of Region V CLP Data A 27 1991  Received for Review on
FROM:	Curtis Ross, Director (5SCRL) Central Regional Laboratory
TO:	Data User: MPCA
	We have reviewed the data for the following case(s).  SITE NAME: SMO Case No.
	No. of D.U./Activity EPA Data Set No. Samples: Numbers
	CRL No.
	SMO Traffic No. ENS 24-31, 33-54, 23
	CLP Laboratory: Of Towa Hrs. Required for Review:
_	Following are our findings: This review covers the analyses
f 9	water and I said sampler for DAR Wolchill
Law	rics. Refu to the case varidation narrative =
uletra	vics. Refu to the case varidation narrative :
	alfamts Stell.
想	Data are acceptable for use.  Data are acceptable for use with qualifications referenced above.  See Data Qualifier sheets and Calibration Outlier forms for flags and AP
( )	additional comments.  Data are preliminary - pending verification by Contractor Laboratory.
( )	See Case Summary above.  Data are unacceptable.

cc: Carla Dempsey,CLP Quality Assurance Officer, Analytical Operations Branch James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

# STERN RUBBER AND TOOL CASE 16929 DELIVERY GROUP ENS 24 WATER AND SOIL - TCL VOLATILES

#### 1 HOLDING TIMES

Holding times for Volatile water and soil samples (sampling to analysis) ranged from 8 to 13 days; there is no indication from the Organic Traffic Report that water samples were preserved with HCl. Aromatic compounds in all samples have been qualified as "J" (estimated) due to possible low bias resulting from loss of aromatics.

#### 2 GC/MS TUNING

GC/MS mass tuning criteria were met for this delivery group.

#### 3 CALIBRATION

Calibration deficiencies are noted on the Calibration Outlier forms.

### 4 LABORATORY BLANKS

Soil Method Blank VBLK15 contained Methylene chloride and Carbon disulfide at very low concentrations (2 and 1 ug/Kg respectively); Methylene chloride had been qualified "U" (non-detected) in the single soil sample ENS 33. Water Method Blank VBLK17 did not contain TCL compounds. Water Method Blank VBLK19 contained Methylene chloride at 2 ug/L; where present in associated Investigative samples Methylene chloride has been qualified as "U"

#### 5 FIELD BLANKS

ENS25 was identified as a Field Blank; there were no TCL compounds quantified in this sample.

### 6 TRIP BLANKS

ENS24 was identified as a Trip Blank; there were no TCL compounds identified in this sample.

### 7 SYSTEM MONITORING COMPOUNDS (SURROGATE SPIKES)

The number three System Monitoring Compound (1,2-Dichloroethane-d4) was recovered at a percentage slightly above the Contract Required Limits of 76-114% in EMS23 MS (120%) and EMS 23MSD (119%); this non-compliance did not result in qualification of Investigative sample compounds.

### 8 MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD)

Both the Water MS/MSD and the Soil MS/MSD were within Contract Required QC Limits.

### 9 INTERNAL STANDARDS PERFORMANCE

Internal Standards were within Contract Required QC Limits for all samples.

### 10 TCL COMPOUND IDENTIFICATION

TCL Compounds quantitated in samples from this Delivery Group were identified using library mass spectra, and Relative Retention Times for these compounds were within the appropriate windows.

### 11 COMPOUND QUANTITATION

TCL Compounds were quantitated as per the CLP Statement of Work.

### 12 TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

TICs present in samples from this Sample Delivery Group were identified using the laboratories mass spectra library as per the CLP Statement of Work.

Warm [2]

### AMENDMENT TO STERN RUBBER AND TOOL CASE 16929 DELIVERY GROUP ENS 24 WATER AND SOIL - TCL VOLATILES

11/13/91

### 1 HOLDING TIMES

CLP Sample Traffic Tags indicated that VOC samples were preserved with HCl to a pH of <2; the "J" (estimated) qualifier has been removed from Aromatic VOC compounds on the Form I data sheets (technical holding times for Aromatic compounds in acid preserved water samples is 14 days). The original non-detect qualifier ("U") for these compounds should be considered appropriate.

11/13/91

					7 23	1134	TCL VOLAT	ILES CALIBI	RATION FOR	M			<u> </u>		1	<u> </u>
		Initial Cal.	Cont. Cal.		Initial Ca	libration	Cont. Calib	ration	Cont. Calib	ration	Cont. Calil	oration	Cont. Cali	bration	Cont. Cali	bration
	Minimum	Minimum	Minimum			Minimum			Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum
	RRF	%RSD	%RSD		RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD
Chiroromethane	0.01															
Bromomethane	0.10	< 20.5	< 25.0	)												
Vinyl chloride	0.10	< 20.5	< 25.0	)												
Chloroethane	0.01															
Methylene chloride	0.01															
Acetone	0.01															
Carbon disulfide	0.01			_								·				
1,1-Dichloroethene	0.10	< 20.5	< 25.0	)												
1,1-Dichloroethane	0.20	< 20.5	< 25.0	)												
1,2-Dichloroethene (total)	0.01			_	<u> </u>							<u> </u>	<u> </u>	<u> </u>		
Chloroform	0.20	< 20.5	<del> </del>													
1,2-Dichloroethane	0.10	< 20.5	< 25.0	)		<u> </u>										<u> </u>
2-Butanone	0.01					33-2							<u> </u>	<u> </u>		
1,1,1-Trichloroethane	0.10	< 20.5	<del></del>										<u> </u>			
Carbon tetrachloride	0.10	< 20.5	<del> </del>													
Bromodichloromethane	0.20	< 20.5	< 25.0	)												
1,2-Dichloropropane	0.01															
cis-1,3-Dichloropropene	0.20	< 20.5														
Trichloroethene	0.30	< 20.5	<del></del>													
Dibromochloromethane	0.10	< 20.5	< 25.0	0												
1,1,2-Trichloroethane	0.10										<u> </u>					
Benzene	0.50	< 20.5	< 25.0	0	<u> </u>	·				· 						
trans-1,3,-Dichloropropene	0.10	< 20.5	< 25.0	0					L			·		<u> </u>		
<u>Bromoform</u>		< 20.5	< 25.0	0												
4-Methyl-2-pentanone							<u> </u>				<u> </u>	<u> </u>				<u> </u>
2-Hexanone					<b></b>	32.0										
Tetrachloroethene	<del> </del>	< 20.5		****	<u> </u>											
1,1,2,2-Tetrachloroethane					<u> </u>		0,441	25.6	0.478	19.4		ļ		<u> </u>		
Toluene	<del></del>	<del></del>	<del></del>		<u></u>			ļ		ļ	ļ	<u> </u>		ļ		
Chlorobenzene			<del></del>		<b></b>											
Ethylbenzene	<del></del>				<b></b>		ļ <u>.</u>							_		
Styrene	·				×	<u> </u>										_
Xylenes (total)		<del></del>			<b></b>											
Bromofluorobenzene	0.20	< 20.5	< 25.0	0	<b></b>	_							1			
			<u> </u>		<b></b>		· ·									
Toluene-d8			ļ		<u></u>						<u> </u>	ļ <u> </u>		ļ	_	
1,2-Dichloroethane-d4	0.01		<u> </u>	_	<b></b> _							J				
		Associated	d Samples	$\perp$			YBIK 17 ENS 23 ENS 24 ENS X	ENS 27	VBIK19	EMS 34						
		Associated					ENS 23	ENS 30	EMS 29							
		Associated					EMS 24	ENS 23 MS	ENS 28							
	-	Associate	d Samples	]			ENSX	FUS 23 MSD	EMS 31		1		<b>I</b>		1	

					7/24	925	TCL VOLAT	ILES CALIBI	RATION FOR	RM_						
		Initial Cal.	Cont. Cal.		Initial Ca	ibration	Cont. Calib		Cont. Calib		Cont. Calib		Cont. Calib	ration	Cont. Calib	ration
	Minimum	Minimum	Minimum			Minimum		Minimum		Minimum		Minimum	Minimum			Minimum
	RRF	%RSD	%RSD		RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD
Chlroromethane	0.01															
Bromomethane	0.10	< 20.5	< 25.0	20.000												
Vinyl chloride	0.10	< 20.5	< 25.0													
<u>Chloroethane</u>	0.01			<b>.</b>							<u> </u>		<b> </b>			
Methylene chloride	0.01															
Acetone	0.01						ļ	ļ			ļ					
Carbon disulfide	0.01				- <del></del>		<u> </u>				ļ					
1,1-Dichloroethene	0.10	< 20.5	< 25.0													
1,1-Dichloroethane	0.20	< 20.5	< 25.0			ļ				ļ	ļ					ļ <u>.</u>
1,2-Dichloroethene (total)	0.01														ļ <u> </u>	
Chloroform	0.20	< 20.5	< 25.0	• (11)							<u> </u>		ļ			
1,2-Dichloroethane	0.10	< 20.5	< 25.0												ļ	<del></del>
2-Butanone	0.01					20.5	ļ <u>.</u>								ļ	
1,1,1-Trichloroethane	0.10		< 25.0			<u> </u>	ļ				ļ. <u> </u>		ļ		ļ	
Carbon tetrachloride	0.10		< 25.0	_0000000							ļ <u></u>	<b></b>	ļ. <u></u>		<u> </u>	
Bromodichloromethane		< 20.5	< 25.0	-			ļ				ļ				·	
1,2-Dichloropropane						ļ	ļ				ļ		ļ		ļ	
cis-1,3-Dichloropropene						ļ										
Trichloroethene	<del></del>		<del></del>													
Dibromochloromethane	0.10			-00000							ļ		<u> </u>			
1,1,2-Trichloroethane	<del></del>		<del></del>								ļ		ļ			
Benzene	<del></del>	<del> </del>		-0.000				ļ					<u> </u>			
trans-1,3,-Dichloropropene		<del></del>	<del></del>	-0.00000			ļ	ļ					<u> </u>	ļ <u>.</u>	ļ	
Bromoform	<del></del>	< 20.5	< 25.0	l 				ļ					ļ			
4-Methyl-2-pentanone	<del></del>		ļ <u> </u>	-		ļ					<del> </del>	<u> </u>	ļ			ļ
2-Hexanone				-		<del> </del>	<u> </u>					ļ	<del></del>	<del> </del>		ļ
Tetrachloroethene		·				- <del> </del>		<u> </u>	<u> </u>	ļ·	-	ļ <u>-</u>	<u> </u>	<u> </u>	-	<del> </del>
1,1,2,2-Tetrachloroethane	<del> </del>		<del></del>	-000000		<u> </u>	ļ	<del> </del> -	ļ	ļ		ļ. <del></del>	-	ļ	<b> </b>	ļ. <u></u>
Toluene				_3000000		·	ļ	<del> </del>	ļ·	<u> </u>		<del> </del>	<b>-</b>	<b></b>	ļ	ļ
Chlorobenzene			<del></del>	-4955555		-	<u> </u>	<del> </del>	ļ <u>.</u>	<u> </u>		ļ	<del> </del>	ļ		·
Ethylbenzene	+	·		-0000000		ļ	<del> </del>	<u> </u>	ļ	ļ	<del></del>		<del> </del>	ļ	<u> </u>	ļ
Styrene		<del></del>				ļ	<del></del>	<u> </u>	ļ			ļ			ļ	
Xylenes (total		<del> </del>		-000000		ļ	<u> </u>	<del> </del>	<u> </u>		<del> </del>	<b> </b>	ļ	<del> </del>		
Bromofluorobenzene	0.20	< 20.5	< 25.0	)		<del> </del>	ļ	<del> </del>		ļ	<del> </del>	- <del> </del>	<del> </del>	<b> </b>	,	
	<u> </u>	ļ	ļ	_		<del> </del>		<del></del>	ļ	<del> </del>		· · · · · · · · · · · · · · · · · · ·	<u> </u>	<b> </b>	<u> </u>	ļ
Toluene-d8				-		-		-	-	<del> </del>		-	<del> </del>	ļ		
1,2-Dichloroethane-d4	0.01		<u> </u>	٠	. Andreas		11 4	6.55		<del> </del>		<del>                                     </del>			<u> </u>	
<u></u>	ļ	Associated		1			ABIRIZ	ENS 26		<u> </u>			ļ			ļ
· · · · · · · · · · · · · · · · · · ·		Associated	<del></del>	_			ENS 33			ļ	.[		<u> </u>	-	.[	<u> </u>
	ļ	Associated		-	5 PRASI	ļ	ENS33 N	¥	ļ	ļ	-	ļ	·}	.	·}	
		Associated	1 Samples		L	1	41.c	1D 935	<u> </u>		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

### CHAIN OF CUSTODY RECORD

CHAIL	VOF COS	וטטו	111	CON	<u> </u>		<u> </u>			Chicago, minois 00004	
PROJ. NO. PROJECT NAME  914 F54 STORN RUBBER & TOOL											
SAMPLERS: (Signapore)	NO.		,	/ /	/ ,	/ /	/ /	/ / /			
· · · · · · · · · · · · · · · · · · ·	OF	]						//		DEMARKS	
Swan lagy	CON-		/, ,	/ /	/ /	/ /	/ /	′ /		REMARKS	
STA. NO. DATE TIME OF STATION LOCATION	TAINERS	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\$/				//	EPA-	TREA	#5	
RU3 8/4hil											
ROU PETIT											
Doz Man											
	1 .310 1							D.12. 00			
SO9 1961 2015 Y SPIKE, MONW-1!	6,40ml	1 ( ) 1		}				743695			
ROS 817 19 1005 Y FIELD BLANK, SW-1	2,40ml						Ė	514376°	1 + 1	-D	
SID 8/7/41 1015 Y SPILE, SW-1	6,40ml	Y									
SII 8/7/11 1025 X DW-1	2,40m	X						514375	3-75	54	
SIZ 84A1 1115 X DSW-1	2,40ml	X						5 (4375)	5-79	56	
S16 8/7/91 1330 Y UW-1	2,40ml	Y					c	5143771	777	2	
RO3 8/L/11/0830 X TRIPBLANK	2,40mL	J 15 143689 - 690					)				
ROY 8/6/91 1830 X FIELD BLANK, MONW-1	2,40ml					<b>&gt;</b>					
DOZ 8/6/91/2010 X DUPE, MONW-1	2,40ml						4				
54 8/7/11/1040 055-1,	2,40=	ŷ					٤	5143750	1-76	0	
Sila	-										
515 817A1 915 BS-1	2,402	V						514376	1-76	2	
Relinquished by, (Signature) Date / Time Received by: (Signature			quish	ed by	: (Sigi	natura,				Received by: (Signature)	
Swan tax 8/8/91/1430											
Relinquished by: (Signature) Date / Time Received by: (Signature	.)	Relin	quish	ed by	Sign	nature)	,	Date	Time	Received by: (Signature)	
Relinquished by: (Signature)  Date / Time Received for Laborator	ry by:	10/	Date	/Tim	e	Re	marks	CFALT	ts 0	16554, 96555	
(Signature)	NIG II AI	18/9	19/	10	00 •0		Remarks COC STACHS 96554, 96555 AIRBILL# 0776937363				
Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files;		oratory	File	1,47	<i>f</i>	┤ ′;	VICVI- LAB	i unile	ESIT	Y OF IOWA	
	•					<u> </u>					

Ø
7

		Heitad Ctate	· Carri		-tal Dec	Acation Academ	100 100			-12	<del></del> -	<del></del>		
<b>⊕EPA</b>		ct Laborator PO Bo	v Proa	ram Alexa	Sampl	tection Agency e Management Office VA 22313 7-2490		anic Traffic Re (For CLP Use Only		Case Number	[	No. (il a	pplica	ble)
1. Sample Description	on (Enter in C					gión Number Sampling Co	4. Date \$h	ipped Airbill Number いつったでナ	5. Date Recei	ved_Received				
Surface Wate     Ground Wate	er er	SD6# EN	(Q)	3	Sam	pler (Name)	Carrier	C Y	1 / 1/ '	DICK Intract Number		<u>пм</u> 25	<del>]</del>	
3. Leachate 4. Rinsate 5. Soil/Sedime	nt ぐ	DG# ET	1/2		3. Sh	ip To: November 1 / CF 114 November 17 / 14 / 16CD		me required for matrix licate aqueous sample.	6. Transfer to		Date Rec	eived		
6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS)		)*		i	013	MARCHINE WITCH GARAGE	1乙 Ship med	ium and high concentra n paint cans.	tion Received by Contract Num	ber	Price	<del> </del>	<del></del>	
CLP	(A) Sample	(B) Concen-		(C)		(D)	See revers	se for additional instruct	(G)	(	H)	(1)	High C Phase:	Conc.
Sample Number (From labels)	Descrip- tion (From box 1)	tration L=low M=med H=high	<b>-</b>	S Anal BNA	Pest/ PCB	Special Handling	Station Location	Date/Time of Sample Collection	Corresponding CLP Inorganic Sample Number	Con	mple dition leceipt	I (Ch	eck be Wa- ter— MIS Liq.	Not Wa
CH251	2	<u></u>	Y				TKII BUML	3/6/91,0820		INTACT	٢			
LN075	2	L	Y			Digity Symet	THUNERIG	28/1/81, 10:00		1				
tN577	2	<u>ا</u>	X				H-MHIM	8/6/91, 7010						
LNS75	2	L	X			SIVE	MONWI-1	9691,7015						
UNSZET		L.	X				SM - 1	States, nos			`\			
LNS23	1	L	X			SINCE	SM-1	3/7/11,1015			· · ·			_
0,50	2	し	X				1.W-1	8/7/11/11/25		<u> </u>			<u> </u>	ļ.
UNS31	2	L	X				DEM - 1	State ins		<del> </del>	<del></del>		<u> </u>	<u> </u>
<u>LNU34</u>	2	<u></u>	X	ļ			11W-1	5/7/1/17/20				_	<u> </u>	
UN5 33	5	L.	X				()'55-1	विभवी, 1040			<del></del> -	-	<u> </u>	_
CNS 26	5		X				١١	8/7/11,0915		14			ļ	<del> </del>
										Final	San	nste	,	
										V		1_	<u>                                     </u>	
·										<u> </u>				<u> </u>
												1_	<u> </u>	_
														<u> </u>
<u></u>									<del></del>		<u> </u>		<u> </u>	<u> </u>
								·		ļ	<u>.                                    </u>	—	<del> </del>	<del> </del>
		<u></u>		<u></u>	L	<u> </u>		<u> </u>		1			<u></u>	

### 1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: <u>HYGIENIC L</u>	AB	Contract: <u>68-D0-015</u>	! ! <u>4_</u> ;	ENS26	 
Lab Code: IOWA C	Case No.: <u>16929</u>	SAS No.:	SDG	No.: ENS23	
Matrix: (soil/water)	SOIL	Lab Sample	ID:	9110453	
Sample wt/vol:	5.0 (g/mL) G	_ Lab File I	<b>)</b> :	V1074	7007
Level: (low/med)	LOW	Date Receiv	ved:	08/09/91	
% Moisture: not dec.	24	Date Analyz	zed:	08/15/91	STR
					כט

GC Column: DB-624 | ID: 0.530 (mm) Dilution Factor: 1.0 Soil Extract Volume: (u1) Soil Aliquot Volume: (u1)

CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q 74-87-3-----Chloromethane\_\_\_\_\_ 10 13 1 74-83-9-----Bromomethane\_\_\_\_\_ 13 !U | 75-01-4----Vinyl Chloride\_\_\_\_\_ 10 13 75-00-3-----Chlordethane\_\_\_\_\_ 13 1 75-09-2----Methylene Chloride 16 1 67-64-1-----Acetone 18 1 75-15-0-----Carbon Disulfide\_\_\_\_\_ 10 1 75-35-4----1,1-Dichloroethene\_\_\_\_ 13 : 11 1 75-34-3-----1,1-Dichloroethane\_\_\_\_ 13 ΙU 1 540-59-0----1,2-Dichloroethene (total)\_\_\_ 13 l U 1 67-66-3-----Chloroform\_\_\_\_ 13 !U 1 107-06-2----1,2-Dichloroethane\_\_\_\_ 13 !U 1 78-93-3----2-Butanone\_\_\_\_\_ 13 1 U 1 71-55-6----1,1,1-Trichloroethane\_\_\_\_ 13 ! U 1 56-23-5-----Carbon Tetrachloride\_\_\_\_\_ - 13 10 1 75-27-4-----Bromodichloromethane\_\_\_\_\_ 13 l U | 78-87-5----1,2-Dichloropropane\_\_\_\_\_ 13 1 U 10061-01-5----cis-1,3-Dichloropropene\_\_\_\_ IU 13 79-01-6-----Trichloroethene\_\_\_\_\_ 13 !U 1 124-48-1-----Dibromochloromethane\_\_\_\_ 13 ; U 1 79-00-5----1,1,2-Trichloroethane\_\_\_\_ 13 !U コンプ 1 71-43-2----Benzene 13 10061-02-6----trans-1,3-Dichloropropene\_\_\_\_ 13 l U 75-25-2----Bromoform\_\_\_\_\_ 13 !U | 108-10-1----4-Methyl-2-Pentanone\_\_\_\_\_ 13 IU 1 591-78-6----2-Hexanone\_\_\_\_\_ 13 ! U 1 127-18-4----Tetrachloroethene\_\_\_\_ l U 13 1 79-34-5----1,1,2,2-Tetrachloroethane\_\_\_\_! 13 ;U 108-88-3-----Toluene\_\_\_\_\_ 13 | 108-90-7-----Chlorobenzene\_\_\_\_\_ l U 13 | 100-41-4-----Ethylbenzene\_\_\_\_| 13 | 100-42-5-----Styrene\_\_\_\_| 13 10.7 1330-20-7----Xylene (total)\_\_\_\_\_

# 1E VOLATILE ORGANICS ANALYSIS DATA SHEET

	EPA	SAMPLE	E NO.
!			
i	ENIC	. 2 6	

TENTATIVELY IDENTIFIED CO	
Lab Name: HYGIENIC LAB C	ontract: 68-D0-0154
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23
Matrix: (soil/water) SOIL	Lab Sample ID: 9110453
Sample wt/vol: 5.0 (g/mL) G	Lab File ID: V1074
Level: (low/med) LOW	Date Received: $08/09/91$
% Moisture: not dec. <u>24</u>	Date Analyzed: 08/15/91  Dilution Factor: 1.0
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: $1.0$
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)
Number TICs found: 0	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>
CAS NUMBER   COMPOUND NAME	RT   EST. CONC.   Q

### 1A VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: HYGIENIC LAB	Contract: 68-D0-0154	ENS33
Lab Code: IOWA Case No.: 16929	SAS No.: SDG	No.: ENS23
Matrix: (soil/water) SOIL	Lab Sample ID:	9110459
Sample wt/vol: 5.0 (g/mL) G	Lab File ID:	V1070 Q
Level: (low/med) LOW	Date Received:	
% Moisture: not dec. <u>30</u>	Date Analyzed:	08/15/91 <b>EX</b> : 1.0
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor	: 1.0 <b>Z</b>
Soil Extract Volume: (ul)	Soil Aliquot Vo	lume:(ul)

	CAS NO.	COMPOUND	(ug/L o	r ug	/Kg)	UG/KG	Q	
ł,								}
;	74-87-3	-Chloromethane			_	14	!U	;
1	74-83-9	-Bromomethane			_	14	! U	•
ł	75-01-4	Vinyl Chloride			_	14	: U	:
ł	75-00-3	-Chloroethane			<u>.</u> 1.	14	ιυ .,	1
1	75-09-2	-Methylene Chloride	,		_	5	iber U	1 1/1/20
ŀ	67-64-1	-Acetone -Carbon Disulfide			_ <b>l</b>	21	! -	+11/1/91
ł	75-15-0	Carbon Disulfide			_ [	14	!U	1
1	75-35-4	-1,1-Dichloroethene			_	14	۱U	1
ŀ	75-34-3	-1,1-Dichloroethane			_	14	IU	}
1	540-59-0	-1,2-Dichloroethene	(total	)	. 1	14	١U	1
. ;	67-66-3	-Chloroform			. 1	14	! U	!
{	107-06-2	-1,2-Dichloroethane			. (	<sub>.</sub> 5	{	<del>-</del>
	78-93-3				_	14	!U	1
1	71-55-6	-1,1,1-Trichloroeth	ane		1	14	١U	!
;	56-23-5	-Carbon Tetrachlori	de		1	14	١U	1
ş	75-27-4	-Bromodichlorometha	ne		. 1	14	١U	<b>!</b>
;	78-87-5	-1,2-Dichloropropan	e		1	14	١U	}
1	10061-01-5	-cis-1,3-Dichloropr	opene		1	14	! U	1
ł	79-01-6	-Trichloroethene	· . —		· ;	. 14	IU	;
1	124-48-1	-Dibromochlorometha	ne		ł	14	l U	!
ł	79-00-5	-1,1,2-Trichloroeth	ane			14	ΙU	;
!	71-43-2	-Benzene				14	!U <b>ブ</b>	!
ļ		-trans-1,3-Dichloro			;	14	¦u '	14.
ľ	75-25-2	-Bromoform	• •			14	IU	1,623
1	108-10-1	-4-Methyl-2-Pentano	ne			14	١U	1 000
ļ	591-78-6	-2-Hexanone				14	ΙU	1 VO 1319
1	127-18-4	-Tetrachloroethene_				14	lU .	1 (((1))
ſ	79-34-5	-1,1,2,2-Tetrachlor	oethane		-	14	(U ,	, V
ŀ	108-88-3	-Toluene				14	iud	•
1	108-90-7	-Chlorobenzene				14	103	;
ŧ	100-41-4	-Ethylbenzene				14	: U: 5r	<b>,</b> .
1	100-42-5	-Styrene			. '	14	iu \$	:
1	1330-20-7	-Xylene (total)			1	14	10.5	f
-	- <b></b>	(1012)/				. •	- <b>V</b>	1
-								

CONCENTRATION UNITS:

# 1E VOLATILE ORGANICS ANALYSIS DATA SHEET

EP	А	S	A۱	ИP	L	E		N	0	•
		_			-	_	_	_		

TENTATIVELY IDENTIFIED COMPOUNDS   ENS33												
Lab Name: HYGIENIC LAB	Contract: 68-D0-0154											
Lab Code: IOWA Case No.: 16929	SAS No.: SDG No.: ENS23											
Matrix: (soil/water) SOIL	Lab Sample ID: 9110459											
Sample wt/vol: $5.0 (g/mL) G$	Lab File ID: <u>V1070</u>											
Level: (low/med) LOW	Date Received: $08/09/91$											
% Moisture: not dec. 30	Date Analyzed: 08/15/91											
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0											
Soil Extract Volume: (ul)	Soil Aliquot Volume:(ul)											
Number TICs found: 0	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>											
	ME											
11												

# RAS

## **ORGANIC**

# SURFACE WATER DATA

PAGE I UF	1 OF	1	PAGE
-----------	------	---	------

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V

DATE:	
SUBJECT:	Review of Region V CLP Data A 27 1991  Received for Review on
FROM:	Curtis Ross, Director (5SCRL) Central Regional Laboratory
TO:	Data User: MPCA
	We have reviewed the data for the following case(s).  SITE NAME: SMO Case No.
	No. of D.U./Activity EPA Data Set No. Samples: Numbers
	CRL No.
	SMO Traffic No. ENS 24-31, 33-34, 23
	CLP Laboratory: Of Towa Hrs. Required for Review:
,	Following are our findings: This review covers the analyses
of @	water and 2 sail sampler for BAS Volatile
an can	rics. Role to the case word time
~ 12	tion orther forms for Jobs Grantus.
	grantifus.
	1
·	
	Worms Stall
	$\sqrt{t}$
1	Data are acceptable for use.  Data are acceptable for use with qualifications referenced above.  See Data Qualifier sheets and Calibration Outlier forms for flags and AP
( )	additional comments.  Data are preliminary - pending verification by Contractor Laboratory.
	See Case Summary above.  Data are unacceptable.
· cc:	

# STERN RUBBER AND TOOL CASE 16929 DELIVERY GROUP ENS 24 WATER AND SOIL - TCL VOLATILES

### 1 HOLDING TIMES

Holding times for Volatile water and soil samples (sampling to analysis) ranged from 8 to 13 days; there is no indication from the Organic Traffic Report that water samples were preserved with HCl. Aromatic compounds in all samples have been qualified as "J" (estimated) due to possible low bias resulting from loss of aromatics.

### 2 GC/MS TUNING

GC/MS mass tuning criteria were met for this delivery group.

#### 3 CALIBRATION

Calibration deficiencies are noted on the Calibration Outlier forms.

#### 4 LABORATORY BLANKS

Soil Method Blank VBLK15 contained Methylene chloride and Carbon disulfide at very low concentrations (2 and 1 ug/Kg respectively); Methylene chloride had been qualified "U" (non-detected) in the single soil sample ENS 33. Water Method Blank VBLK17 did not contain TCL compounds. Water Method Blank VBLK19 contained Methylene chloride at 2 ug/L; where present in associated Investigative samples Methylene chloride has been qualified as "U"

### 5 FIELD BLANKS

ENS25 was identified as a Field Blank; there were no TCL compounds quantified in this sample.

#### 6 TRIP BLANKS

ENS24 was identified as a Trip Blank; there were no TCL compounds identified in this sample.

### 7 SYSTEM MONITORING COMPOUNDS (SURROGATE SPIKES)

The number three System Monitoring Compound (1,2-Dichloroethane-d4) was recovered at a percentage slightly above the Contract Required Limits of 76-114% in EMS23 MS (120%) and EMS 23MSD (119%); this non-compliance did not result in qualification of Investigative sample compounds.

### 8 MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD)

Both the Water MS/MSD and the Soil MS/MSD were within Contract Required QC Limits.

#### 9 INTERNAL STANDARDS PERFORMANCE

Internal Standards were within Contract Required QC Limits for all samples.

### 10 TCL COMPOUND IDENTIFICATION

TCL Compounds quantitated in samples from this Delivery Group were identified using library mass spectra, and Relative Retention Times for these compounds were within the appropriate windows.

### 11 COMPOUND QUANTITATION

TCL Compounds were quantitated as per the CLP Statement of Work.

### 12 TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

TICs present in samples from this Sample Delivery Group were identified using the laboratories mass spectra library as per the CLP Statement of Work.

Warmiter

### AMENDMENT TO STERN RUBBER AND TOOL CASE 16929 DELIVERY GROUP ENS 24 WATER AND SOIL - TCL VOLATILES

### 11/13/91

### **1 HOLDING TIMES**

CLP Sample Traffic Tags indicated that VOC samples were preserved with HCl to a pH of <2; the "J" (estimated) qualifier has been removed from Aromatic VOC compounds on the Form I data sheets (technical holding times for Aromatic compounds in acid preserved water samples is 14 days). The original non-detect qualifier ("U") for these compounds should be considered appropriate.

Maus Rd Mp 11/13/91

7/23 1/34 TCL VOLATILES						ILES CALIBI	3RATION FORM								
		Initial Cal.	Cont. Cal.	DOV-04	libration	Cont. Calib	ration	Cont. Calib	ration	Cont. Cali	bration	Cont. Cal	ibration	Cont. Cal	bration
	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum
	RRF	%RSD	%RSD	RRF	%RSD	RRF	%RSD	RRF ·	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD
Chlroromethane	0.01														
Bromomethane	0.10	< 20.5	< 25.0												
Vinyl chloride	0.10	< 20.5	< 25.0												
Chloroethane	0.01														
Methylene chloride	0.01														
Acetone	0.01					ļ				<u> </u>				<u> </u>	<u> </u>
Carbon disulfide	0.01			<u>.</u>						<u> </u>	_				
1,1-Dichloroethene	0.10	< 20.5	<del></del>	-00000		ļ									
1,1-Dichloroethane	0.20	< 20.5	< 25.0	<u> </u>											<u> </u>
1,2-Dichloroethene (total)	0.01												ļ		
Chloroform	0.20	< 20.5		-000000 <del></del>									· .		
1,2-Dichloroethane	0.10	< 20.5	< 25.0												
2-Butanone	0.01				33-2	:			<u></u>						
1,1,1-Trichloroethane	0.10	< 20.5	<del></del>							<u> </u>					
Carbon tetrachloride	0.10	< 20.5	<del></del>	-0000000 <u></u>						<u></u>					
Bromodichloromethane	0.20	< 20.5	< 25.0											_	
1,2-Dichloropropane	0.01										_	<u> </u>			
cis-1,3-Dichloropropene	0.20	< 20.5	<del></del>	_0000						ļ				_	
Trichloroethene	0.30	< 20.5	<del></del>	-0:0002						<u> </u>					
Dibromochloromethane	0.10	< 20.5								<u> </u>					
1,1,2-Trichloroethane	0.10	< 20.5	< 25.0								_				
Benzene	0.50	< 20.5		-XXXXXXX											
trans-1,3,-Dichloropropene	0.10	< 20.5	< 25.0												
Bromoform	0.10	< 20.5	< 25.0					<u> </u>		<u>.</u>					
4-Methyl-2-pentanone	0.01								ļ						
2-Hexanone	0.01				32.0		<u> </u>							_	
Tetrachloroethene	0.20	< 20.5		_000000						ļ		_			
1,1,2,2-Tetrachloroethane	0.50	< 20.5	< 25.0	)		0,441	25.6	0.478	19.4				.		
Toluene			< 25.0	)				<u> </u>	<u> </u>						
Chlorobenzene	0.50	< 20.5	< 25.0	)			ļ		<u> </u>		<u> </u>				
Ethylbenzene	0.10	< 20.5	< 25.0	)	<u> </u>			ļ	<u> </u>	ļ					
Styrene	0.30	< 20.5	< 25.0	)			Ĺ			<u> </u>					
Xylenes (total)		+		-000000						<u> </u>					
Bromofluorobenzene	0.20	< 20.5	< 25.0	)	1										
					1										
Toluene-d8															
1,2-Dichloroethane-d4	0.01														
•		Associate	d Samples			YBIK 17 ENS 23 ENS 24 ENS 24	ENS 27	VBIK19	EMS 34						
· ·		Associate	d Samples			ENS 23	ENS 30	EMS 29							
		Associate				ENS 24	ENS 23 MS	EN. 28				_			
		Associate	d Samples			ENSX	FIS 23 MGC	EMS 31							

			7/24 925		925	TCL VOLAT	ILES CALIB	IBRATION FORM					1			
		Initial Cal.	Cont. Cal.	Initial Ca		Cont. Calib	ration	Cont. Cali	bration	Cont. Cali	bration	Cont. Cal	ibration	Cont. Cali	bration	
	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	Minimum	
	RRF	%RSD	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	RRF	%RSD	
Chlroromethane	0.01															
Bromomethane	0.10	< 20.5	< 25.0													
Vinyl chloride	0.10	< 20.5	< 25.0								-					
Chloroethane	0.01		,													
Methylene chloride	0.01															
Acetone	0.01															
Carbon disulfide	0.01															
1,1-Dichloroethene	0.10	< 20.5	< 25.0													
1,1-Dichloroethane	0.20	< 20.5	< 25.0													
1,2-Dichloroethene (total)	0.01															
Chloroform	0.20	< 20.5	< 25.0													
1,2-Dichloroethane	0.10	< 20.5	< 25.0				,									
2-Butanone	0.01	,			20.5											
1,1,1-Trichloroethane	0.10	< 20.5	< 25.0													
Carbon tetrachloride	0.10	< 20.5	< 25.0												T	
Bromodichloromethane	0.20	< 20.5	< 25.0													
1,2-Dichloropropane	0.01															
cis-1,3·Dichloropropene	0.20	< 20.5	< 25.0													
Trichloroethene	0.30	< 20.5	< 25.0													
Dibromochloromethane	0.10	< 20.5	< 25.0													
1,1,2-Trichloroethane	0.10	< 20.5	< 25.0													
Benzene	0.50	< 20.5	< 25.0													
trans-1,3,-Dichloropropene	0.10	< 20.5	< 25.0													
Bromoform	0.10	< 20.5	< 25.0													
4-Methyl-2-pentanone	0.01															
2-Hexanone	0.01					,	1									
Tetrachloroethene	0.20	< 20.5	< 25.0													
1,1,2,2-Tetrachloroethane	0.50	< 20.5	< 25.0													
Toluene	0.40	< 20.5	< 25.0													
Chlorobenzene	0.50	< 20.5	< 25.0													
Ethylbenzene	0.10	< 20.5	< 25.0													
Styrene	0.30	< 20.5	< 25.0	) 												
Xylenes (total)		< 20.5	< 25.0	)												
Bromofluorobenzene																
Toluene-d8	0.01		1													
1,2-Dichloroethane-d4	0.01															
		Associated	d Samples	VALKUB		VBIVIS	ENS 26					<u> </u>				
		Associated				FAX 33										
		Associate				ENS33 N	4			1		-				
·		Associate				ENS 33 ENS 33 N ENS 33 N	40			- I						
	-l	1		1- <b>1</b>		110- 77/1	317		_1		<u> </u>	-L			<del></del>	

((0)

REGION 5 230 South Dearborn Street Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

	PROJ. NO.   PROJECT NAME / / / / / /																	
						_ (					/	/ /	/ /	/ /	′ / ,	/ /	/	
917(F	-541	STE	RN	B	UBBE	卫安"	TCOL	NO.							//			
SAMPLER		,						OF		/	/ /	/ /	/ /	/ /	///			·
Su	NEECI	Pax	W	•				CON-		. /								REMARKS
STA. NO.	PAR	TIME	COMP.	GRAB		STATIO	N LOCATION	TAINERS		\$/						**	TREA	#5
RU3	8 juhi																<u>:</u>	
ROH	8/1			-														
	8/km								·									
500	Bluki	2015		Y	SPIKE	. MON	W-1	6,40ml	>						51436	,95	- 70	0
R05	8/7/9	स्वाधाः स्वाधाः		ý		•	L, 5W-1	2,40ml	1						5143			
SID	8/7/41	1015	<del>↑</del>	V		, 54	•	6,40ml	Y						51437			
				Ý	DW-	1		2,40ml	X						5143			
SIZ	8/2/hI	1115		χ	DSW			2,40ml	Υ						5 (43	755	5-79	5 b
SIL	8/7/91	1330		X	uw.	-1		2,40ml	У						51437	+71	17	2
RO3	8/41	C&30		χ	TRIP	BiAN	K	2,40mL	Ŷ						5143	69	-690	>
		1830		χ	fieu	aug c	NK, MONW-1	2,40ml	χ						5143691-692			
200	8/6/91	2010		χ	aur	E, M	DN W-1	2,40ml	Ϋ́						5143693-694			
94	817/11	1040			055	1		2,400	Ŷ						5143	759	1-76	0
SHLE															<del></del>			
515	8/7/11	915			BS.	-1		2,402	Х						5143	761	- 76	2
Relinquish	ed by: L	Signature)			Date	/Time	Received by: (Signature)	1	Relir	nquish	ed by	: (Sig	natura	)		Date /	Time	Received by: (Signature)
Sus	an fe			8	891	1430												
Relinquish			<del></del>		Date /		Received by: (Signature)		Relin	quish	ed by	: (Sig	nature	,		Date /	Time	Received by: (Signature)
																Í		
Relinquish	linquished by: (Signature)  Date / Time   Received for Laboratory by:   Date / Time   Remarks   COC SEACHS 06554, 96555																	
							(Signature)		8/9	7/9/	10	00		$\Omega$	511124 HE1113	, ,~	72/0	2777
Distribution: White - Accompanies Shipment: Pink - Coordinator Field Files: Yellow - Laboratory File										FUST FOCIT	Y OF INWA							
~	Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File LAB; UNIVERSITY OF LOWA-																	

Ø
7
_

·						( v v v	10 100								
	Contra	ct Laborator	y Prog	ram	Sample	tection Agency B Management Office	Orga	nic Traffic Re	epoi	 T	Case Number	er SAS I	No. (if a	pplica	ble)
<b> <b>♦EPA</b></b>			x 818 -557-24		TS 55		·	(For CLP Use Only	<i>(</i> )		16929 -			_	
Sample Descriptio	•	•			2. Re	gion Number Sampling Co.	4. Date \$h	ipped Airbill Number.	اتمك	5. Date Receive	Ved_Received by DICKS WEETING				
1. Surface Water	∍r		Α,	3	Sami	oler (Name)	Carrior	- <u>Γ</u>		Laboratory Contract Number Unit Price			• • • • • • • • • • • • • • • • • • •	7.	
<ol> <li>Ground Wate</li> <li>Leachate</li> </ol>	er		132	,		III NYTUTY		<del></del>		6. Transfer to	154	<u> </u>	<u> </u>		
4. Rinsate	n	NO FE				ip To: INCRESTY OF IN INCRESTY HYGO		me required for matrix licate aqueous sample.	.	o. Transfer to		Date Rece	)IVEO		
1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS)								um and high concentra	ation	Received by					
7. Waste (SAS) 8. Other (SAS) (Specify)					I	onition by the 2020	samples in	paint cans.	-	Contract Numb	or	Price			
6. Other (SAS) (Specify)						IN KICHINI SUICE	See revers	e for additional instruct			•	Tiles	<del>-,</del>		
				(C) S Anal	ysis	(D)	(E)	(F) Date/Time of	(	(H)			Conc. s alow)		
Sample Number	Descrip- tion	tration L=low	-	<u> </u>	Pest/	Special Handling	Station Location	Sample Collection	1	rresponding P Inorganic		nple dition	Sol-	Wa- ter—	No
(From labels)	(From bax 1)	M=med H=high	VOA	BNA	РСВ	. Taridining	Location	Conection	Į.	Sample Number		eceipt	id	MIS Liq.	MI:
12524	2	L	Y				TKIFBUNK	3/6/91,0830			INTACT	l-m			
LN375	2	٠٠	Y			Leaner Elliat	Thereside	18/1/11/10/20			1				
F52NJ	2	. ا	X				H-MATH	8/6/91, 7010							
UN576	Z	L	X			SIVE	MUNUU-1	9/6/91,7015							L
17529	1	<u>L.</u>	X				SW - T	<del>                                     </del>	_			· · ·			_
INS23	1	L	X			SIME	541-1	5/7/11,1015				. `	↓		_
LIVE	2_	<u></u>	X				1.W-1	8/7/11/11/15				<u>-</u>			<u> </u>
UNS31	2	レ	ΙΧ				DSM-1	Harri ins			<u> </u>		┦		<u> </u>
UNS 34	2	L	Ϋ́	ļ			11W-1	5/7/11 1330					ļ	ļ	
UN5 33	5	L.	V				052-1	8/1/91,1040			<u> </u>		<u> </u>		_
CNS 26	5	L.	X				という	8/7/11,015			4				<u> </u>
							·		<u> </u>				++		<u> </u>
			ļ						 		And	San	ysle	ļ	<u> </u>
			<b></b>									/			_
												<del>-</del>	<del> </del>	ļ	<u> </u>
													↓		<u> </u>
										···			<u> </u>		<u> </u>
								·					<b></b>		<u> </u>
				· .	,								<u> </u>		_
									L						L

23_	7001
	Ω
	$\sim$

Contract: 68-D0-0154

Lab Code: IOWA Case No.: 16929 SAS No.:

SDG No.: ENS

Lab Sample ID: 9110450

Matrix: (soil/water) WATER

Lab Name: HYGIENIC LAB

Sample wt/vol: 5.0 (g/mL) ML

Lab File ID:

V1084

Level: (low/med) LOW

Date Received: 08/09/91

% Moisture: not dec.

GC Column: DB-624 ID: 0.530 (mm)

Date Analyzed: 08/17/91 Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_ (ul)

Soil Aliquot Volume: \_\_\_\_(ul)

	CAS NO.	COMPOUND	CONCEN (ug/L					, Q	
;					1			1	-
i	74-87-3	-Chioromethane					10		;
;	74-83-9	-Bromomethane					10	l U	. 1
ł	75-01-4	-Vinvl Chloride			1		10	l U	1
ł	75-00-3	-Chloroethane -Methylene Chlorid					10	l U	1
1	75-09-2	-Methylene Chlorid	9				10	l U	1
1	67-64-1	-Acetone			-		10	ł U	1
ł	75-15-0	Carbon Disulfide_			;		10	l U	1
ł	75-35-4	-1,1-Dichloroethen	9				10	! U	}
1	75-34-3	-1,1-Dichloroethan	e		!		10	ΙU	1, .
1	540-59-0	-1,2-Dichloroethen	e (tota	1)			10	: U	11/1/91
ļ	67-66-3	-Chloroform					10	۱U	1 ' 1 '
-	107-06-2	-1,2-Dichloroethan	e				10	١U	1
ļ	78-93-3	-2-Butanone			!		10	ΙU	1
!	71-55-6	-1,1,1-Trichloroet	nane		!		10	l U	{
1	56-23-5	-Carbon Tetrachlor	ide		1		10	l U	!
ļ	75-27-4	-Bromodichlorometh	ane		<u></u>		10	١U	1
1	78-87-5	-1,2-Dichloropropa	ne		1		10	١U	!
1	10061-01-5	-cis-1,3-Dichlorop	ropene		;		10	١U	ļ
ł	79-01-6	-Trichloroethene	. –				10	١U	1
1	124-48-1	-Dibromochlorometh	ane				10	! U	-
ł	79-00-5	-1,1,2-Trichloroet	nane				10	ΙU .	1 0
ľ	71-43-2	-Benzene					10	1n 🕽	1 2
ļ	10061-02-6	-trans-1,3-Dichlor	poropen	e	¦		10	10'	: 33
		-Bromoform					10	. ! U	1 2
1	108-10-1	-4-Methyl-2-Pentan	one				10	!U	1 300
;	591-78-6	-2-Hexanone		-~	;		10	ΙU	11/2 2
ì	127-18-4	-Tetrachloroethene				•	10	Ü	
i	79-34-5	-1,1,2,2-Tetrachio	roethan	e			10	iu ,	1
1	108-88-3	-Toluene			<sub>-</sub>		10	iu *	1
i	108-90-7	-Chlorobenzene		-~		,	10	iu 🗲	
!	100-41-4	-Ethylbenzene			;		10	1U 3/	
	100 17 4				:		10	:: 4	i

10

100-42-5----Styrene\_\_\_\_

1330-20-7-----Xylene (total)\_\_\_\_\_

# 1E

	EPA	SAMPLE	NO.
¦			

VOLATILE ORGANICS ANALYSIS DA TENTATIVELY IDENTIFIED COMP		
	tract: 68-D0-0154	
Lab Code: IOWA Case No.: 16929 SA	S No.: SDG No.: ENS	23_
Matrix: (soil/water) WATER	Lab Sample ID: 9110450	
Sample wt/vol: 5.0 (g/mL) ML	Lab File ID: V1084	آ د
Level: (low/med) LOW	Date Received: 08/09/9	<u> </u>
% Moisture: not dec.	Date Analyzed: 08/17/9	1 2
GC Column: DB-624 ID: 0.530 (mm)	Dilution Factor: 1.0	
Soil Extract Volume: (ul)	Soil Aliquot Volume:	(ul)
	ONCENTRATION UNITS: ug/L or ug/Kg) <u>UG/L</u>	
CAS NUMBER   COMPOUND NAME		
Soil Extract Volume:(ul)  Number TICs found: 0 (  COMPOUND NAME	Soil Aliquot Volume:  ONCENTRATION UNITS:  ug/L or ug/Kg) UG/L  I RT I EST. CONC. I	Q (ul)

## **MINNESOTA**

## DEPARTMENT OF HEALTH

## **ORGANIC**

GROUND WATER ANALYSES

ORG.FORM.FY91.1

09123737

09123738

### HINNESOTA DEPARTHENT OF HEALTH Chemical Laboratory Section Organic Chemistry Unit

Date Collected: 10-17-91

WATER ANALYSES ONLY

Budget 1: PL

Date Received: 10-17-91 10-18-9/

Report To: S. Meger

Collected by: 5 Megel .. MPCA

Chain of Custody /: \_\_\_\_\_

Field Blank 1: 9/23734

Laboratory Number	Field Number	Sample Description	- Container- Number Type
9123734	B PRINCELL	Trip Blank	3 40ml
9123735	B RW-2	Fellman-outdoor Foucet	4 40
9123736	c 05W-1	on-site well # 1 -dep	4 40
9123737	d SP-1	Sand point # 1 - suthwest	4 40
9123738	e SP-2	Sand point # 2 - Southers	+ 4 40
Analys	es Request Option	ALL a b c	d
GASOLINE/FUEL OI VOLATILE ORGANIC CHLOROPHENOXY AC	ATED ORGANICS (THI L + HALOGENATED	463	7 3 0 1991
POLYCHLORINATED PHTHALATE ESTERS	BIPHENYLS (PCBs)	420	
PESTICIDES, CHL TOXAPHENE TECHNICAL CHLORD DDT GROUP PESTICIDES, NIT		520 530 550	C. Gould Vale
SPECIAL SAMPLE H		560	vite Vaste Div.
Field Notes:	RW-2 weth	was fizzy when collected	
Laboratory Notes	1	·	

1

SAMPLED: 10/17/91 ANALYZED: 10/25/91 REPORTED: 10/30/91 LAB SAMPLE #: 9123734

FIELD BLANK #: 9123734

REPORTING			AMOUNT	:	REPO	RTING	AMOUNT
		IMIT	FOUND			LIMIT	FOUND
COMPOUND	(	UG/L)	(UG/L)	COMPOUND		(UG/L)	(UG/L)
Dichlorodifluoromethane	:== .,	1.0	======	1122-Tetrachloroeth	2222 200/	0.2	======
Chloromethane	; \ <	2.0		123-Trichloropropand		0.5	
Vinyl Chloride	`	1.0				0.2	
Bromomethane	`	2.0		Bromobenzene  2-Chlorotoluene	~	0.5	
Chloroethane	`	1.0		4-Chlorotoluene	~	0.5	•
Dichlorofluoromethane				1,3-Dichlorobenzene		0.2	
Trichlorofluoromethane		2.0		1,4-Dichlorobenzene		0.2	
Trichloro-	•			1,2-Dichlorobenzene		0.2	
trifluoroethane	<	0.2		1,2-Dibromo-			
1,1-Dichloroethene	<	0.5		3-Chloropropan	e <	2.0	
Allyl Chloride	ζ.	0.5		124-Trichlorobenzen	e <	0.5	
Methylene Chloride	ζ.	0.5		Hexachlorobutadiene		0.5	•
t-1,2-Dichloroethene	<	0.1		123-Trichlorobenzen	e <	0.5	
1,1-Dichloroethane	<	0.2		Ethyl Ether	<	2.0	•
2,2-dichloropropane	<	0.5		Acetone	<	20	
c-1,2 Dichloroethene	<	0.2		Methyl tertiary-			
Chloroform	<	0.1		Butyl Ether	<		
Bromochloromethane	<	0.5		Methyl Ethyl Ketone	<	10	
1,1,1-Trichloroethane	<	0.2		Tetrahydrofuran	<	10	
1,1-Dichloropropene	<	0.2		Benzene		0.2	
Carbon Tetrachloride	<	0.2		Methyl Isobutyl Ket	oneく		
1,2-Dichloroethane	<	0.2		Toluene		0.2	
Trichloroethene	<	0.1		Ethyl Benzene		0.2	
1,2-Dichloropropane	<	0.2		m+p-Xylene		0.2	
Bromodichloromethane	<	0.2	-	o-Xylene		0.2	
Dibromomethane	<	1.0		Styrene		0.5	
c-1,3-Dichloropropene	<	0.2		Isopropyl Benzene		0.5	
t-1,3-Dichloropropene	<	0.2		n-Propyl Benzene		0.5	
1,1,2-Trichloroethane	<	0.2		135-Trimethylbenzen		0.5	
1,3-Dichloropropane	<	0.2		tert-Butyl Benzene		0.5	
Tetrachloroethene	<	0.2		124-Trimethylbenzen		0.5	
Chlorodibromomethane	<	0.5		sec-Butylbenzene		0.5	
1,2-Dibromoethane	<	1.0		p-Isopropyltoluene		0.5	
Chlorobenzene	<	0.2		n-Butylbenzene		0.5	
1112-Tetrachloroethane		0.2		Naphthalene	<	0.5	
Bromoform	<	1.0		1			

COMMENTS:

Trip blank

Legend:

< = less than</pre>

MINNESOTA DEPARTMENT OF HEALTH - CHEMICAL LABORATORY
VOLATILE HYDROCARBONS (code 465)

10/17/91 LAB SAMPLE #: 9123735

SAMPLED: 10/17/91 ANALYZED: 10/25/91

REPORTED: 10/30/91 FIELD BLANK #: 9123734

**COMMENTS:** 

Fellman - outdoor Forcet

Legend:

< = less than

9123736

LAB SAMPLE #:

VOLATILE HYDROCARBONS (code 465)

SAMPLED: 10/17/91

ANALYZED: 10/25/91 REPORTED: 10/30/91

REPORTED: 10/30/91 FIELD BLANK #: 9123734

^ REI	TING	AMOUNT	R		TING	AMOUNT	
COMPOUND		IMIT	FOUND (UG/L)	COMPOUND		IMIT	FOUND (UG/L)
COMPOUND	, ===	06/11/	(00/11)	COMPOUND	, ====		(00/11)
Dichlorodifluoromethane	 e<	1.0		1122-Tetrachloroetha	ne<	0.2	
Chloromethane	<	2.0		123-Trichloropropane	<	0.5	
Vinyl Chloride	<	1.0		Bromobenzene	<	0.2	
Bromomethane	<	2.0		2-Chlorotoluene	<		
Chloroethane	<	1.0		4-Chlorotoluene	<		
Dichlorofluoromethane	<	1.0		1,3-Dichlorobenzene	<		
Trichlcrofluoromethane	<	2.0		1,4-Dichlorobenzene	<		
Trichloro-				1,2-Dichlorobenzene	<	0.2	
trifluoroethane	<	0.2		11,2-Dibromo-			
1,1-Dichloroethene	<	0.5		3-Chloropropane	<	2.0	
Allyl Chloride	<	0.5		124-Trichlorobenzene		0.5	
Methylene Chloride	<	0.5		Hexachlorobutadiene	<		
t-1,2-Dichloroethene	<	0.1		123-Trichlorobenzene			
1,1-Dichloroethane	<	0.2		Ethyl Ether	<		
2,2-dichloropropane	<	0.5		Acetone	<	20	
c-1,2 Lichloroethene	<	0.2		Methyl tertiary-		2 2 .	
Chloroform	<	0.1		Butyl Ether	<	2.0	
Bromochloromethane	<	0.5		Methyl Ethyl Ketone	<	10	
1,1,1-Trichloroethane	<	0.2		Tetrahydrofuran	<	10	
1,1-Dichloropropene	<	0.2	0 0	Benzene	<b>&gt;</b>	0.2 5.0	
Carbon Tetrachloride	· <	0.2	0.2	Methyl Isobutyl Ketor		0.2	. 19
1,2-Dichloroethane Trichloroethene	<	$0.2 \\ 0.1$		Toluene	<b>〈</b>	0.2	. 19
	< <	0.1		Ethyl Benzene  m+p-Xylene	<		
1,2-Dichloropropane Bromodichloromethane	<	0.2		o-Xylene	<		
Dibromomethane	~	1.0		Styrene	<		
c-1,3-Dichloropropene	<	0.2	•	Isopropyl Benzene	<b>`</b>		
t-1,3-Dichloropropene	<	0.2		n-Propyl Benzene		-0.5	
1,1,2-Trichloroethane	`	0.2		135-Trimethylbenzene	~		
1,3-Dichloropropane		0.2		tert-Butyl Benzene	<		
Tetrachloroethene	<	0.2		124-Trimethylbenzene			
Chlorodibromomethane	`	0.5		sec-Butylbenzene	~		
1,2-Dibromoethane	`	1.0		p-Isopropyltoluene	<i>`</i>		
Chlorobenzene	`	0.2		n-Butylbenzene	<i>`</i>	0.5	
1112-Tetrachloroethane		0.2		Naphthalene	~	0.5	
Bromoform	<	1.0			•	•••	

**COMMENTS:** 

Stern Rubber & Tool deep well

Legend:

< = less than

MINNESOTA DEPARTMENT OF HEALTH - CHEMICAL LABORATORY VOLATILE HYDROCARBONS (code 465)

LAB SAMPLE #: 9123737

SAMPLED: 10/17/91 ANALYZED: 10/25/91 REPORTED: 10/30/91

FIELD BLANK #: 9123734

Dichlorodifluoromethane	REPORTING AMOUNT LIMIT FOUND (UG/L) (UG/L)	COMPOUND	FOUND	RTING LIMIT (UG/L)	REPO	COMPOUND
1,1-Dichloroethane        0.2       Ethyl Ether        2.0         2,2-dichloropropane        0.5       Acetone        20         c-1,2 Dichloroethene        0.2       Methyl tertiary-        2.0         Bromochloromethane        0.5       Methyl Ether        2.0         Bromochloromethane        0.5       Methyl Ethyl Ketone        10         1,1-Trichloroethane        0.2       Benzene        0.2         Carbon Tetrachloride        0.2       Methyl Isobutyl Ketone       5.0         1,2-Dichloroethane        0.2       Toluene        0.2         Trichloroethene        0.1       Ethyl Benzene        0.2         1,2-Dichloropropane        0.2       m+p-Xylene        0.2         Bromodichloromethane        0.2       D-Xylene        0.2         Dibromomethane        0.2       Isopropyl Benzene        0.5         t-1,3-Dichloropropene        0.2       In-Propyl Benzene        0.5	roethane < 0.2 ropane < 0.5	1122-Tetrac   123-Trichlo  Bromobenzene   2-Chlorotole  4-Chlorotole  1,3-Dichlore  1,4-Dichlore  1,2-Dichlore  1,2-Dibromoes	(UG/L)	1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0	nane «	Dichlorodifluoromet Chloromethane Vinyl Chloride Bromomethane Chloroethane Dichlorofluorometha Trichlorofluorometh Trichloro- trifluoroethane 1,1-Dichloroethene Allyl Chloride Methylene Chloride
1,2-Dichloroethane< 0.2	<pre></pre>	Ethyl Ether  Acetone  Methyl tert:   Butyl    Methyl Ethy:  Tetrahydrof:  Benzene	0.2	0.2 0.5 0.2 0.1 0.5 0.2	e ce ce ce ce ce ce ce ce ce ce ce ce ce	1,1-Dichloroethane 2,2-dichloropropane c-1,2 Dichloroethen Chloroform Bromochloromethane 1,1,1-Trichloroetha 1,1-Dichloropropene
1,3-Dichloropropane< 0.2	<pre></pre>	Toluene  Ethyl Benzer  m+p-Xylene  o-Xylene  Styrene  Isopropyl Ber  135-Trimethy   tert-Butyl If  124-Trimethy   sec-Butylber  p-Isopropylf  n-Butylbenze		0.2 0.1 0.2 0.2 1.0 0.2 0.2 0.2 0.2 0.5 1.0	eene < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane < ane <	1,2-Dichloroethane Trichloroethene 1,2-Dichloropropane Bromodichloromethan Dibromomethane c-1,3-Dichloroprope t-1,3-Dichloroprope 1,1,2-Trichloroetha 1,3-Dichloropropane Tetrachloroethene Chlorodibromomethan 1,2-Dibromoethane Chlorobenzene 1112-Tetrachloroeth

COMMENTS:

Stern Rubber & Tool Sand point (south west)

Legend:

< = less than</pre>

HYDROCARBONS (code 465)

10/17/91 10/25/91 SAMPLED: ANALYZED:

10/30/91 REPORTED:

LAB SAMPLE #:

FIELD BLANK #: 9123734

REPORTING		AMOUNT		REPO		AMOUNT	
COMPOUND		IMIT UG/L)	FOUND (UG/L)	COMPOUND		LIMIT (UG/L)	FOUND (UG/L)
=======================================	===		======		=====	=====	======
Dichlorodifluoromethan		1.0		1122-Tetrachloroeth		0.2	
Chloromethane	<	2.0		123-Trichloropropan			
Vinyl Chloride	<	1.0		Bromobenzene	<b>' &lt;</b>		
Bromomethane	<	2.0		2-Chlorotoluene	<	0.5	
Chloroethane	<	1.0		4-Chlorotoluene	<		
Dichlorofluoromethane				1,3-Dichlorobenzene			
Trichlorofluoromethane	<	2.0		11,4-Dichlorobenzene	<		
Trichloro-				1,2-Dichlorobenzene	<	0.2	
trifluoroethane	<	0.2		1,2-Dibromo-			
1,1-Dichloroethene	<	0.5		3-Chloropropan		2.0	
Allyl Chloride	<	0.5		124-Trichlorobenzen			
Methylene Chloride	<	0.5		Hexachlorobutadiene			
t-1,2-Dichloroethene	<	0.1		123-Trichlorobenzen			
1,1-Dichloroethane	<	0.2		Ethyl Ether	<		
2,2-dichloropropane	<	0.5		Acetone	<	20	
c-1,2 Dichloroethene	<	0.2		Methyl tertiary-			
Chloroform	<	0.1		Butyl Ether	<	2.0	
Bromochloromethane	<	0.5		Methyl Ethyl Ketone	<	10	•
1,1,1-Trichloroethane	<	0.2		Tetrahydrofuran	<	10	
1,1-Dichloropropene	<	0.2		Benzene	<	0.2	
Carbon Tetrachloride	<	0.2	0.2	Methyl Isobutyl Ket	oneく	5.0	
1,2-Dichloroethane	<	0.2		Toluene	<	0.2	210
Trichloroethene	<	0.1		Ethyl Benzene	<	0.2	0.3
1,2-Dichloropropane	<	0.2		m+p-Xylene	<	0.2	1.5
Bromodichloromethane	<	0.2		o-Xylene	<	0.2	0.3
Dibromomethane	<	1.0		Styrene	<	0.5	·
c-1,3-Dichloropropene	<	0.2		Isopropyl Benzene	<	0.5	
t-1,3-Dichloropropene	<	0.2		n-Propyl Benzene	<		
1,1,2-Trichloroethane	<	0.2		135-Trimethylbenzen			
1,3-Dichloropropane	<	0.2		tert-Butyl Benzene	<		
Tetrachloroethene	ζ.	0.2	0.2	124-Trimethylbenzen			
Chlorodibromomethane	`	0.5		sec-Butylbenzene	`		
1,2-Dibromoethane	ζ.	1.0		p-Isopropyltoluene	<		
Chlorobenzene	`	0.2		n-Butylbenzene	<i>`</i>		
1112-Tetrachloroethane		0.2		Naphthalene	ż	0.5	
Bromoform	रे	1.0			•	· · · ·	
						· 	

**COMMENTS:** 

Stern Rubber & Tool Sondpoint (southeast)

Legend:

< = less than

